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Attrition of College of Home Economics students at Iowa State University 1951-1972

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Attrition of College of Home Economics students at Iowa State University 1951-1972

by

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Students are a primary concern of institutions of higher education including students who graduate as well as those who leave before receiving their degree. During these present times of overall stabilizing or declining college enrollments and rising educational costs, institutions and students alike are especially interested in maximizing student talent and institutional expenditures while minimizing student and institutional wastage. Attrition affects students and institutions and, in fact, society as a whole including families of withdrawing students and every taxpayer.

The United States has witnessed many changes in society and higher education these past two decades, some of which might be expected to have significant impact on attrition in college. Among the societal conditions of the 1960's, which contrasted to those of the 1950's (Knoell, 1966), were increasing social unrest among college-age youth, greater questioning of traditional values, diminishing stigma formerly attached to early marriage, dropout from school and college, an atmosphere of economic prosperity, and a prevailing "cold war" peace.

Several of the changes in higher education pertinent to attrition included increases in the number and percentage of youth attending college, growth of community junior colleges, development of one- and two-year vocational programs, improvements in the quality of entering college freshmen, and greater mobility of college students (Knoell, 1966). More specifically, from 1962-63 through 1972-73 home economics has seen undergraduate enrollment increase by 96 percent which in comparison to national trends in higher education for the same period of time represents a greater

proportionate rate of growth than was generally true for higher education at the undergraduate level (Harper, 1975). However, the proportion of women graduates graduating in home economics has been steadily declining as more and more educational and career opportunities are opening for women (Mc Grath and Johnson, 1968).

In reference to how changes in society and higher education would affect college attrition, Summerskill (1962, p. 650) commented:

> Of course, no one knows the answers, but two things are clear. There is need for continuing re-examination of the facts about attrition that serve as the bases for current policy on admissions, instruction, grading, and counseling. There must be vigorous basic research on the business of going to college and learning, so that the colleges, always with limited resources, will know how to foster maximum intellectual development in the maximum number of students.

Results of a national study (Astin, 1972) of college dropouts conducted in 1970 revealed that although at college entrance nearly 95 percent of the students aspired to attain a baccalaureate degree, four years later more than 40 percent had left their first institution without the degree. Of those who left only half ever had transcripts sent to a second institution. These findings are similar to the conclusions Summerskill (1962) made after reviewing literature on college dropouts almost a decade earlier. American colleges lose approximately half of their students in the four years after matriculation. Approximately 40 percent graduate four years after entering a particular institution, and approximately 20 percent graduate at a later time and/or at another institution. However, Knoell (1966, p. 66) warned, "Stability in the gross attrition rates over an extended period of time should give little cause for complacency, if one

considers the changes in both society and higher education which have taken place in recent decades."

In a report to university personnel, Menne ("Dropout Students," Note 1, p. 1) made these remarks concerning previous research on student attrition at Iowa State University:

> Generally, these studies indicate no definite clear patterns and have left us with no clear cut information about what must be changed in order to ameliorate the problem. Rather, we are left with the conclusion that "further research" is necessary and that this type of study is particularly messy and difficult.

The College of Home Economics (Inman et al., Note 2) at Iowa State University surveyed its graduates to evaluate the effectiveness of the college programs of study. However, another component in the student flow in college is represented by students who enroll and leave the college before completing their degree. Since a specific study of attrition in the College of Home Economics had not been conducted for over a couple of decades, the Dean requested that such an investigation be made. If the reasons for student attrition were better understood, hopefully those involved in all aspects of recruitment and retention of students could work more successfully with students.

The purpose of this study was to:

1. Identify reasons for withdrawal of Iowa students in the College of Home Economics at Iowa State University during 1951-1972.
2. Compare reasons for withdrawal and background data of students during 1951-1959 to those of students during 1960-1972.
3. Analyze the reasons for withdrawal in relationship to the student variables: educational levels of the mother and father, occupations of the mother and father, high school rank, age at college

entrance, educational goal, student employment, year of college entry, cumulative grade point average, and college quarters completed.

Terms used in this study are defined as follows:

Dropout: Any Iowa resident who had entered the College of Home Economics at Iowa State University during 1951-1972 as a first quarter freshman and left the college within the first or succeeding quarters before receiving a bachelor's degree in home economics. The terms nongraduate and unsuccessful student are used synonymously with dropout in this study.

REVIEW OF LITERATURE

This chapter will begin with an overview of attrition in higher education and then will focus on attrition specifically in home economics. A review of conceptual frameworks used as the bases for attrition research will be presented followed by the conceptual framework of this investigation. All studies reviewed were limited to those of home economics students enrolled in four-year institutions except two national studies and one large community college investigation.

Overview of Attrition in Higher Education

Definition of dropout

Research on attrition in higher education generally has been conducted using one of two main operational definitions of the college dropout. The first definition defines a dropout as any person who leaves the college of initial matriculation before completing degree work, and the second definition refers to those who never graduate from any institution of higher education.

The first definition of dropout is used most frequently and is appropriate to research aimed at concerns and policies of particular institutions. In seeking the most efficient utilization of educational monies, facilities, staff and student talent, this definition is "an important criterion for admissions officers, institutional planners, guidance and counseling personnel, social scientists, and others concerned with student morale, institutional commitment, and with the prediction, explanation, or prevention of student turnover" (Spady, 1970, p. 65). Methodologically the definition is much easier to use and is conducive to the collection of more

reliable data. However, its single institutional orientation excludes student flow in the system of higher education as a whole and, thus, is accused of being narrow and misleading. The mobility of students between institutions and temporary leaves of absence during their college careers result in an overestimation of attrition using this definition.

The second definition is appropriate to the orientation of the wider system of higher education of society as a whole. Student talent and institutional resources are considered wasted only when the dropout fails to complete a program in some institution of higher learning. Tinto and Cullen (1973, p. 3) explain further:

> Since the definition focuses attention on the system of higher educational institutions, it has been most often employed by educational and social planners, by social scientists concerned with problems of the production of "human capital," and by government officials concerned with the allocation of scarce resources among alternative forms of high-level manpower production.

This definition has two primary disadvantages: (1) reliable data collection methods would be extremely cumbersome and difficult and (2) the data collected from various institutions would not be uniform.

Both definitions approach research on the dropout from a single or multi-institutional perspective rather than from an individual point of view which may view withdrawal in the best interest of the student rather than something to be avoided as is generally assumed in institutional studies.

Overview of attrition research

The phenomenon of college attrition has been the topic of numerous research studies and because of its complexity still remains unresolved. Several reviews of the literature on college dropouts have been completed

during the 1960's and early 1970's. Included among these reviews were those by Summerskill (1962), Marsh (1966), Knoell (1966), Cope (1968), Spady (1970), and Tinto and Cullen (1973).

Summerskill (1962) in a review of the literature examined rates of attrition and, in greater depth, factors associated with dropping out of college. Summerskill subdivided the factors associated with college withdrawal accordingly: (1) biological and social--age at matriculation, sex, socio-economic factors, hometown location and size; (2) academic--secondary school preparation, scholastic aptitude, academic performance at college; (3) motivation; (4) adjustment to college life; (5) illness and injury; and (6) finances.

Classification of attrition studies by Knoell (1966, pp. 64-65) resulted in four major types of studies:

> . . . (1) the census study, which serves primarily to establish base-line data for particular institutions or states; (2) the "autopsy study," which attempts to identify the reasons for attrition by asking the dropouts questions at the time they withdraw; (3) the case study approach, often used by admissions officers and others whose concerns are decisions about students, rather than research; and (4) prediction, in which admission variables are related to success and failure in college, including dropout.

Marsh (1966) in a review of the literature classified three categories of studies: (1) philosophical and theoretical, offering recommendations for action and additional research; (2) descriptive, presenting the extent of the problem and describing the dropout in terms of his ability, background, personality and value system, and stated reasons for withdrawal; and (3) predictive, employing various measures to predict students who will persist to college graduation.

Cope (1968) in a less extensive literature review also examined: (1) rates of attrition by classifying them as national or institutional and (2) causes of attrition including reasons for withdrawal, tests of academic ability, and school size or rural-urban origin.

Spady (1970) in a review of the literature organized the studies into the following categories: (1) background variables--parents, potential, and past performance; (2) sex-linked role of educational goals and interests; (3) personality dispositions; and (4) interpersonal relationships. However, missing from the attrition research was an analytical-explanatory category.

In an overview of single and multi-institutional studies on college dropouts, Tinto and Cullen (1973) focused primarily on the changing effect of social status on dropout because it appeared to have increased in its power to discriminate between those who persist and those who dropout more than the factor of ability. A synthesis of research findings was presented using the three basic dimensions and subclassifications as follows: (1) individual characteristics--family background, a person's ability and sex, past educational experiences, goal commitment; (2) interaction within the college environment--grade performance, intellectual development, varying forms of social integration including peer group associations, extracurricular activities, faculty associations; and (3) institutional characteristics--institutional type, college quality and student composition, and institutional size.

Major national research studies

A review of two recent national studies by Alexander Astin will be presented to provide an overview of attrition in higher education including reasons for withdrawal, student background data, and influences of the environment.

Astin (1975) administered a questionnaire in 1968 to 243,156 students, a representative national sample of 358 two- and four-year colleges and universities. A follow-up questionnaire was mailed in 1972 to a sample of the original 1968 sample, and 41,356 questionnaires were properly completed and returned. The follow-up questionnaire gathered information about the students' educational progress: years attended, degree completed, degree plans, college financing and employment, and college residence. Analysis of the data included development of quantitative estimates of the student's chances of dropping out based on the 1968 freshmen personal background data and identification of environmental experiences that further influence a student's chances of dropping out.

The most frequent reasons for dropping out of college given by men and women together were boredom with courses (32 percent), financial difficulties (28 percent), dissatisfaction with requirements or regulations (22 percent), and change in career goals (19 percent). However, the most important reason for women was marriage, pregnancy, or other family responsibility (39 percent). Another difference between sexes was poor grades which ranked fourth in importance for men (28 percent) and seventh for women (14 percent). The category "some other reasons" was checked by 28 percent of the respondents indicating that one or more important reasons were not included on the list. On the whole, the relative importance of

these reasons was comparable to those reported in earlier studies, perhaps, with the exception of poor grades which seemed to have decreased in importance.

A number of student characteristics have been found to be related to college attrition (Astin, 1975). The potential dropout most likely has a poor secondary school academic record, low college aspirations, poor study habits, relatively uneducated parents, and small town background. Other items associated with dropping out are being older than most freshmen, having Protestant parents, having no personal religious preference, and being a cigarette smoker. Being married or having marriage plans is related to college withdrawal for women and persistence for men. Listed in order of predictive importance were: student's past academic record and ability, degree plans at college entrance, religious background and preference, college financial concerns, study habits, and educational levels of parents. These findings were consistent with previous dropout studies except for study habits.

Astin (1975) also found that the source and amount of financial aid for college expenses can be an important factor in college persistence. Parental aid increases the student's chances of completing college except for women from the high-income category. Financial support from spouses, if it is major, increases persistence, while if it is only minor increases attrition. Receiving scholarships or grants increases persistence rates slightly and is of greatest benefit to women of low income and men of middle income. Financial support through loans regardless of size is detrimental to men. For women small loans have a positive effect on persistence and large loans have a negative effect. Financing college expenses

predominately through savings increases the student's chances for dropping out.

Findings related to type and extent of employment also affected the student's chances for completing college (Astin, 1975). On the whole, part time employment (less than 25 hours per week) increases college persistence rates and is most beneficial to students receiving no or only minor support from grants or loans. If an entering freshman is married though, employment has a negative impact, but if marriage occurs after matriculation, employment has a positive effect. Generally on-campus jobs are preferable to those off-campus, job satisfaction has little impact on persistence, and off-campus jobs related to students' career goals increase the student's chances of withdrawing.

Social and academic environmental factors also influence student attrition. Freshmen residence in the dormitory maximizes a student's chances of remaining in college. For men simply leaving home increases their persistence rates even if they live in an apartment, while women are more apt to remain in college when living at home rather than in an apartment or private room. The student variable most strongly related to persistence was the grade point average (GPA), although this is not always a true indication of a student's academic potential. In addition, placing women with low grades on academic probation enhances their chances of college graduation, while for men the effect was negative. Among extracurricular activities, membership in fraternities and sororities was highly related to student persistence.

Student-institutional "fit" was examined and selected interaction effects were summarized: a student is more likely to persist at an

institution which attracts students with similar social backgrounds especially town size, religion, and race, and a student does not necessarily increase persistence by attending an institution with students of comparable ability.

Astin (1972) took a representative sample of 217 two- and four-year institutions and followed for four years 51,712 students who entered college in 1968. Nearly half (47 percent) of the students graduated within four years, and if the students still enrolled at their first institution were classified as nondropouts, the persistence rate rose to nearly 60 percent.

Similar to the 1975 study findings, high school grades and academic ability measures of students were the major persistence predictors. Among other predictors that were important were: being a male, being a nonsmoker, having high degree aspirations at college entrance, financing college expenses primarily through parental support, scholarship, or personal savings, and contrary to the later finding, not being employed during the school year.

Home Economics Studies of Factors and Reasons for Attrition

This section of the literature review focuses on specific investigations of attrition in four-year colleges within home economics itself or in combination with other vocational fields of study. The presentation will include: (1) factors associated with attrition in home economics, (2) reasons for withdrawal, and (3) activity of dropouts following withdrawal.

Factors associated with attrition

Since attrition is an outcome of the interaction of the student and the college environment, the literature pertaining to factors associated with attrition will be organized under the broad categories of student characteristics and college environment.

Student characteristics High school rank generally is considered the best single predictor of college success. Socio-economic status of parents, age, marital status, educational goals, employment, and college financial sources are other student factors that have been investigated in previous studies.

High school rank Mc Cormick (1971) investigated factors related to persistence and withdrawal of agriculture and home economics students and found that rank in the high school graduating class and high school grade point average were more significant to student persistence and withdrawal than was the size of high school graduating class. Female students had higher high school ranks and grade point averages than did males. Of the persisters approximately 63 percent of the males and 89 percent of the females ranked in the upper one-third of their high school graduating class; of the dropouts approximately 36 percent of the men and 57 percent of the women ranked in the upper one-third of their high school graduating class.

In agreement with the findings of Astin (1975), Kauffman (1944) and Terry (1972) found that graduates had significantly higher high school averages than did the dropouts. Likewise, a significant difference in rank in high school class of home economics graduates and dropouts resulted in the study conducted by Derr (1966).

Education and occupation of parents A significant relationship between the occupation of the father and persistence of home economics students was reported by Badgett (1966), Bourgeois (1966), and Terry (1972). While the general trend was that students were more likely to graduate if their fathers held higher status occupations, students in the study by Bourgeois were more likely to graduate if their fathers were employed in lower status occupations.

As most studies report, more students with parents who have professional class status or high incomes are more likely to attend college in the first place than are students whose parents have low-class status and smaller incomes. Such was the case for women but not for the men in the study by Mc Cormick (1971) even though occupation of the father and family income did not prove to be a significant factor contributing to withdrawal. For students who withdrew, women reported more fathers in agriculture and professional or managerial occupations than did the men. Using the Kahl's breaks on the North-Hatt Scale of Occupational Prestige, the following sample distribution of status of occupation of students' father resulted: 28 percent high status, 57 percent middle, and 13 percent low status occupations.

The occupation of the mothers was not significantly related to persistence (Harper, 1951; Bourgeois, 1966; Bolerjack, 1968; Mc Cormick, 1971; Terry, 1972). More mothers of both graduates and dropouts were classified as homemakers than in any other occupation. However, the graduates had more mothers employed outside the home than did dropouts (Bourgeois, 1966; Terry, 1972) and the larger group of mothers employed outside the home were employed in professional occupations (Bourgeois, 1966).

Generally neither the education of the father or mother proved to be a significant factor in the home economics attrition studies, while Astin (1975) found that students of more educated parents dropout less often. The educational attainment, though, tended to be higher for parents of graduates than for parents of dropouts (Badgett, 1966; Bourgeois, 1966; Terry, 1972) and higher for parents of women students than for parents of men students (Mc Cormick, 1971). This trend in educational attainment by the mothers was found to be significantly different between persisters and dropouts in a study by Bolerjack (1968). The mothers of students who withdrew had less education than mothers of students who persisted.

Age at college entrance Enge (1962) mailed questionnaires to 82 dropouts in college during 1955-1960 and received replies from 27. The age range for these students at the time of withdrawal was 17 to 24 years. Approximately 17 percent were 24 years old and 17 percent were 21 years old, and roughly 28 percent were 19 years old and 28 percent were 20 years of age. The remaining age groups were very small. The median age of the dropouts in Leahy's (1953) study was 19 years and 6 months and of the persisters 20 years and 2 months. Three other studies reported no significant difference between the dropouts and persisters regarding age at entrance as freshmen students (Harper, 1951; Derr, 1966; Bolerjack, 1968). These findings were contrary to those of Astin (1975) who reported a positive association between age and attrition. Older students and especially older women were more likely to withdraw than students of the usual entry age of 17-19 years old.

Badgett (1966) investigated ages of students at marriage and at last college attendance. The ages of students at marriage were not significantly

different between dropouts and persisters. The majority of all students married between 19 and 20 years of age. However, ages at last college attendance were significantly different between the successful and nonsuccessful students. The successful married students were in college at an older age (24.4 years) than the nonsuccessful married students (22.7 years).

Marital status Even though marriage is considered a significant factor for female college attrition in most research findings, several studies found marital status did not differ significantly between dropouts and persisters (Harper, 1951; Bourgeois, 1966; Knickerbocker, 1972; Terry, 1972). In the following studies, the majority of dropouts remained single during college attendance: Nelson (1953) reported few students were married at matriculation and during college attendance; Pattison (1965) and Bourgeois (1966) found 13 percent of the dropouts were married before withdrawal, while approximately 87 percent remained single; and Terry (1972) found approximately 36 percent of the dropouts and graduates were married before or during college.

A difference between the dropouts and persisters regarding marital status was observed by Leahy (1953). Thirteen of the 27 dropouts versus eight of the 27 students still in attendance were married. A comparison of home economics graduates and dropouts by Derr (1966) revealed 27 percent of the dropouts and 47 percent of the graduates were single, while 71 percent of the dropouts and 53 percent of the graduates were married. Mc Cormick (1971) also noted that married men were more likely to persist than were married women. Of the graduates, more than one-half of the men and only 28 percent of the women were married. Of the dropouts, 44 percent of the

men and 39 percent of the women were married. These latter results agreed with the findings of Astin (1975) that marriage was related to persistence for men but withdrawal for women.

Educational plans at college entrance A significant relationship was found between graduates and dropouts regarding their intentions to graduate when entering college (Badgett, 1966; Bourgeois, 1966). Those students who planned to earn a degree tended to graduate in larger numbers than those who did not. Of those who planned to attend college until marriage or who were undecided, 86 and 94 percent, respectively, withdrew before graduation, while 75 percent of the students who initially planned to graduate and then marry and/or work received their bachelor's degrees (Bourgeois, 1966). These findings were consistent with those of Astin (1975) that stated the higher the degree aspirations of the student, the greater was the probability of persistence in college.

Two earlier studies reported that the majority (about 60-75 percent) of dropouts had indicated at matriculation that they intended to remain in college four years to graduate (Anonymous, 1941; Corbin, 1954). However, of the 33 dropouts stating such intentions in the study by Corbin (1954), 70 percent withdrew before their sophomore year, and the remaining 30 percent dropped out between their sophomore and junior years.

Employment and financing of college expenses The source of income for student college support was found to be significantly related to persistence in studies by Bourgeois (1966), Mc Cormick (1971), and Terry (1972). Students totally dependent upon their parents for financial support were more likely to withdraw than students partially or completely independent of their parents' financial assistance. Astin (1975) noted

that parental aid was the major source of support for 65 percent of the white women and that only 16 percent received no parental aid. His overall findings also showed a small but statistically significant positive relationship between major parental support (versus no support) and persistence in college. Students who received scholarships, were employed part time, and/or were dependent upon loans for economic support were more likely to graduate than those students who did not. However, as previously reported, financial support through loans had had a negative effect on persistence of men regardless of loan size and negative effect on persistence of women with large loans and positive effect with small loans (Astin, 1975). Another contradiction to these findings was that not being employed during school was associated with persistence (Astin, 1972) rather than being employed part time. In a sample of married students, Badgett (1966) also found a significant difference between dropouts and persisters regarding college financial support through loans. Contrary to Astin's (1975) findings, though, students who borrowed more money for college costs had a greater probability for success.

Regarding employment, three observations were made which were similar to those of Astin (1975). Terry (1972) noted that while more graduates than dropouts were employed part time or intermittently, more dropouts than graduates were employed full time. Although not significant, dropouts in the study by Badgett (1966) worked more and financed a larger portion of their expenses through employment than did the persisters. Since the sample consisted of married students, Badgett suggested that this difference may have affected the amount of time available to fulfill the roles in marriage and in college. Finally, Mc Cormick (1971) who studied attrition in

the College of Agriculture and Home Economics discovered that part time employment was more related to persistence of men than of women. Men students tended to be employed in greater numbers than women students. Mc Cormick also pointed out that twice as many men as women were recipients of scholarships and loans.

No significant differences between graduates and dropouts in the source of funds used to finance their college education were found by Harper (1951), Derr (1966), and Knickerbocker (1972). In these studies, the majority of students primarily received financial assistance from their parents. However, contrary to most home economics studies, Knickerbocker noted slightly more dropouts than persisters had loans, and the ratio of persisters and dropouts that were employed their first year of college was similar.

Summary of student characteristics Research pertaining to student characteristics associated with attrition has consistently shown that students with higher high school ranks have a greater tendency to graduate from college than do students with lower high school ranks.

Although the findings are inconclusive, the differences in the educational levels of parents and the occupation of the mothers of graduates and dropouts were not found to be significant in the home economics studies reported, while the differences in the occupations of the fathers of graduates and dropouts were. The socio-economic status of the parents appeared to be more important for female students than for male students.

In most cases age at college entrance did not differ significantly between the dropouts and persisters. However, for married students the successful students were older.

Most research studies consider marriage a significant factor in female college attrition. However, some studies show no significant difference in marital status of graduates and nongraduates with the large majority single, while other studies show the trend for more graduates to be single and dropouts to be married.

Educational goals of students at matriculation are related to persistence. The higher the educational level sought, the greater will be the probability for graduating.

The source of financing for college expenses is related to persistence. The majority of students receive financial support from their parents, and students increase their chances of graduating if they are only partially dependent upon their parents rather than completely dependent on or independent of their support. Students who receive financial aid through part time employment, scholarships, and loans are more likely to graduate than those who do not.

College environment Investigations of attrition in home economics have focused on aspects of the college environment including college grade point average, curriculum, time of withdrawal, college residence, and college faculty and services.

College grade point average In analyzing the importance of grade point average (GPA) in relation to attrition, transfer, and persistence of students, Knickerbocker (1972) found a significant difference in GPA's of dropouts and persisters, transfers and persisters but not between dropouts and transfers. Others too have found cumulative GPA to be related to persistence (Wagner, 1941; Kauffman, 1944; Harper, 1951; Badgett, 1966; Bolerjack, 1968; Mc Cormick, 1971). Astin (1975) supported these findings.

Bolerjack's (1968) results revealed 31 percent of the female persistors had grades above 3.00, while only 6 percent of the withdrawers did, and only two percent of the persisters had GPA's below 2.00 versus 46 percent for the withdrawers. The mean GPA for graduates was 2.6 and 2.1 for dropouts which were significantly different (Terry, 1972).

Though students with higher cumulative GPA's tend to graduate in larger numbers than those with lower cumulative GPA's, not all withdrawers have low scholastic averages. Pattison (1965) found the largest cluster of dropouts or nearly one-third of them had GPA's in the range of 2.00-2.49 on a 4.00 scale which was adequate for graduation. Likewise, another investigation (Anonymous, 1941) discovered one-half of the withdrawers were able students. However, in checking the representativeness of the sample who returned the questionnaire, Harper (1951) noted that students with higher scholastic averages were more likely to respond than students with low averages.

College major Kauffman (1944) found a significant difference between persisters and dropouts regarding certain college majors. Attrition was greater than persistence among students majoring in applied art, child development, home management, technical journalism, and textiles and clothing at Iowa State University. In addition, at withdrawal more than half of the dropouts had not chosen a college major.

On the other hand, Bourgeois (1966) found the specialized career interest generally not related to persistence except for those students indicating interest in home economics in business. Students with this major had the lowest withdrawal rate which was only 11 percent. Likewise, Corbin (1954) found no significant difference in the influence of the area

of specialization in home economics on attrition, but entering college with a fairly definite choice of work specialization appeared to reduce the chances of withdrawal. Mercer (1941) noted that indecision regarding vocational choice was expressed by only 16 percent of the entering class but 32 percent of the withdrawing group. Because of this Mercer suggested that perhaps indecision about vocational curriculum choice should be of greater concern. The study by Burns (1966) also revealed that over half of the dropouts had changed their career goal, and about one-fourth of the respondents had expressed concern in high school about the uncertainty of their college major.

The distribution of home economics majors among dropouts varied with individual studies (Anonymous, 1941; Mercer, 1941; Leahy, 1953; Burns, 1966). Home economics education and home economics for general education generally were the most frequent majors among dropouts.

College quarters completed Knickerbocker (1972) found a significant difference among dropouts in the year when most withdrawals from college occur. A significant difference occurred between the first and third year, first and fourth year, second and third year, and second and fourth year. In other words, the majority of withdrawals occurred in the first and second years as shown by other studies (Kauffman, 1944; Enge, 1962; Pattison, 1965; Bourgeois, 1966; Burns, 1966; Derr, 1966). An exception to this trend was revealed in Harper's (1951) study in which twice as many students withdrew in their junior and senior years as did students who graduated. However, since the classification for the nonrespondents could not be obtained, the dropout pattern may have been the result of the

tendency of the most successful students to respond in larger numbers than the less successful dropouts.

Even though the majority of students withdraw during their freshmen and sophomore years of college, some differences concerning when these withdrawals occurred existed between studies. Burns (1966) reported the greatest attrition rate (81.5 percent) of students enrolled three quarters or less. In fact, 33.1 percent of all dropouts were enrolled only one quarter which made the first quarter the highest single withdrawal period followed by the third quarter (29.8 percent), the second most critical period of attrition. Six quarters was the longest length of enrollment for any of the dropouts. In examining the quarters of the nonrespondents, Burns found 42.6 percent had withdrawn after one quarter, and 90.1 percent had been enrolled three quarters or less.

Similar findings were reported by Pattison (1965) and Derr (1966). The sample distributions according to college classifications were: slightly over 50 percent freshmen, approximately 30-35 percent sophomores, 8-13 percent juniors, and 2-3 percent seniors. Enge (1962) found the dropouts among freshmen and sophomores more evenly distributed at 48.1 percent and 44.4 percent, respectively, and Bourgeois (1966) and Lawson (1954) reported the attrition rate among freshmen was about 45 percent and approximately 35 percent among sophomores.

Place of college residence Contrary to the findings of Astin (1975), home economics attrition studies have generally found the place of residence while attending college not significantly related to persistence or attrition (Harper, 1951; Bourgeois, 1966; Derr, 1966; Mc Cormick, 1971; Knickerbocker, 1972). The majority of graduates and nongraduates lived in

dormitories or with their parents (Bourgeois, 1966; Knickerbocker, 1972). Mc Cormick (1971) noted a general tendency for both men and women dropouts and persisters to change college residence during the four years from dormitory to off-campus housing. Both men persisters and withdrawers living in fraternity housing followed this trend, while the number of women persisters living in sorority houses remained constant, and the number of women dropouts in sorority housing decreased each year.

Bourgeois (1966) and Knickerbocker (1972) found no significant difference between graduates and nongraduates in their satisfaction with their living accommodations. The majority of students felt the housing satisfactory. On the other hand, Derr (1966) found a significant difference between the withdrawers and persisters regarding satisfaction with housing arrangements. Fewer of the dropouts than graduates were satisfied with the housing, 76 percent to 94 percent, respectively. Harper (1951) also found 14 percent more withdrawals than graduates dissatisfied with university living conditions although the difference was not significant.

Assistance from university personnel needed before withdrawal

Researchers have also asked dropouts ways the university could have been more helpful to them. The following are among the suggestions given by the dropouts in Enge's (1962) study: better student-teacher relationships, better teaching and teaching methods, more guidance, more individual help, and curriculum and course offering changes.

On the whole, dropouts and persisters have expressed satisfaction with the college counseling and faculty advisement program regarding academic and nonacademic needs (Burns, 1966; Badgett, 1966; Mc Cormick, 1971). In examining the counseling in various college settings, Burns (1966) found

80 percent of the dropouts felt the home economics counseling was adequate, about 80 percent indicated the counseling in the dormitories was adequate, only 54.2 percent living in other types of housing indicated the counseling was adequate, and only 51.1 percent of the respondents felt the university counseling in general was adequate.

Even though students generally felt the counseling was adequate, 48 of 66 (72.7 percent) dropouts felt a counselor could have helped them in regard to specific problems, 13.6 percent said a counselor could not have helped, 10.6 percent were uncertain, and 3.1 percent indicated they had received assistance from a counselor prior to withdrawal (Burns, 1966). These students expressed the need for more help planning their schedule, understanding the necessity of so many different subjects, and solving personal adjustments, financial, and psychological problems. Some students felt the counselors were not interested in the students, while others admitted not taking advantage of their services.

Summary of college environment The college grade point average is related to persistence and withdrawal. Low academic achievement is associated with attrition and high academic achievement with graduation, although a considerable number of students with satisfactory grades do leave college.

The influence of the college major on attrition does not appear to be consistent. Lack or uncertainty of college major seems to have some impact on attrition.

The majority of withdrawals occur the first two years of college with the freshman year having the highest rate of attrition. The majority of persisters and dropouts lived in dormitories or with their parents. The

pattern of change in residence during college is from dormitory and fraternity and sorority to off-campus housing. Dropouts tend to be less satisfied with their housing arrangements than persisters.

Even though dropouts generally have been satisfied with the college personnel, students have expressed the need for more assistance with academic and nonacademic problems, better instruction, and changes in curriculum and course offerings.

Reasons for withdrawal

Early studies of attrition of home economics students primarily focused on reasons for withdrawal which were often multiple (Anonymous, 1941; Mercer, 1941; Wagner, 1941). In these studies marriage, financial difficulty, dissatisfaction with program, illness, lack of interest in home economics, and scholastic difficulties were cited by approximately one-fifth to one-third of the students in at least one or more cases. However, the percentages and the rank order of reasons varied among studies. Although marriage ranked first in Mercer's study, scholastic or financial difficulty or family problems were present in over one-half of the cases prior to marriage plans. Interest in other fields ranked first in the study by Wagner (1941) and economic difficulties was the most frequent reason in the third study. Kauffman (1944) examined reasons given by home economics students at I.S.U. to the administration at the time of withdrawal. No reasons had been reported by 43.2 percent of the students. Of the reasons cited, only 14 percent were known to be valid. The most common reasons were: (1) transfer to another institution or division at I.S.U. (31.2 percent), (2) academic dismissal (12.9 percent), (3) illness (2.7

percent), (4) lack of interest (2.6 percent), and financial difficulties (1.4 percent). Marriage or marriage plans was given by only .5 percent of the students.

Of six studies reported in the 1950's, marriage was the most frequent reason for withdrawal (Harper, 1951; "Report," Note 3; Nelson, 1953; Leahy, 1953; Lawson, 1954; Corbin, 1954). Approximately one-fifth to over one-half of the students listed it including 41.3 percent of the home economics students at I.S.U. who dropped out in 1951-1952. Leahy noted that marriage which ranked first with no other reason even a close second may be an "umbrella," "face-saving," and "socially acceptable" item. Harper commented that it was the students with low grade averages that did not return their questionnaire, and, if they did perhaps grades rather than marriage would have been the first ranking reason. Lack of interest in home economics, transfer, scholastic difficulties, insufficient funds, health, family complications were others among the most frequent reasons given. The investigations by Leahy (1953) and Lawson (1954) were carried out in conjunction with the survey of 31 institutions conducted by the Association of Land-Grant Colleges and Universities which focused on general reasons for withdrawal presented above as well as reasons pertaining to curriculum in home economics, instruction in home economics, and instruction in other courses. In these latter three categories, too many science courses, too much lecture, too many long laboratory periods, uninteresting instruction in home economics courses, and lack of individual help in all courses were the most common reasons for withdrawal.

Among the general reasons for student attrition reported in the 1960's and early 1970's, the most important reason varied between studies from

academic difficulties and/or dismissal to inadequacy of counseling to marriage (Pattison, 1965; Derr, 1966; Bourgeois, 1966; Burns, 1966; Terry, 1972). To illustrate the variances, marriage was reported by 5 percent of the dropouts in a study by Pattison (1965) to 55 percent of the dropouts in an investigation by Bourgeois (1966). Terry (1972) and Bourgeois (1966) noted that marriage was by far the most frequent reason cited for withdrawal from college, while ability and interest in another field (Bourgeois, 1966), friends attending another university, and moving with spouse or family (Terry, 1972) were the outstanding reasons given by students for transferring. Derr (1966) reported that more women in her study withdrew for academic factors rather than nonacademic factors: academic dismissal, transfer, marriage, financial difficulty, loss of interest, family responsibilities, and ill health were the reasons listed in order of decreasing frequency. The most frequent reasons for withdrawal cited in the study by Mc Cormick (1971) were change of educational objective, marriage, lack of educational objective, illness, or death. Missing from the list was academic difficulty which was in reality more important than reported by the students. Terry (1972) found that dropouts who did not pursue their education elsewhere were more reluctant than graduates or transfers to admit they had worked up to their potential. Other popular reasons for attrition of the 1960's and early 1970's were insufficient funds, employment, motivation, disinterest, transfer, and dislike of the teachers. Badgett (1966) investigated married students' reasons for attrition and the three main reasons given were lack of: (1) time to carry out multiple roles, (2) access to college, and (3) sufficient funds.

Specific reasons concerning the curriculum in home economics and instruction within and outside the field included: too many science courses, disappointing content, large classes, no individual help, too many long laboratories, too rigid curriculum the first two years, and uninteresting instruction (Enge, 1962; Burns, 1966).

Nearly half of the students cited more than one contributing factor causing them to withdraw. In fact, Burns (1966) found the number of factors checked ranged from one to 24 with six factors being the average number. Harper (1951, p. 78) also concluded that:

> There is no one factor which can be pointed out as being a specific reason for student withdrawal. It is really a combination of several factors which creates a situation that often leads to withdrawal.

In summary, marriage, insufficient finances, transfer to another institution, academic difficulties, dissatisfaction with curriculum, and lack of interest have been leading reasons for withdrawal in home economics studies which seem to be consistent with those reported by Astin (1975) except for less importance given to poor grades.

Activity of dropouts following withdrawal

Employment Studies by Derr (1966), Burns (1966), Lawson (1954), and Nelson (1953) examined the occupation of the dropouts after withdrawal from college. Derr found 38 percent were homemakers, 38 percent were employed full time, 13 percent were employed part time, and 9 percent were students. Burns found the greatest percentage of respondents employed in the following work: secretarial or clerical positions, students, full time homemakers, and clerking or sales positions. Nelson also reported that while over two-thirds of the married respondents had worked outside the

home after marriage, only a few of their jobs were related to home economics regardless of the number of years of college completion. In addition, very few were employed three years or more. Over 50 percent in the study by Burns reported satisfaction with their present employment position, nearly 30 percent expressed a desire to do something else, and about 13 percent wanted to return to school.

The dropouts in the investigation by Terry (1972) reported low salaries, limited opportunities for advancement, unstable employment, and dissatisfaction with their jobs.

Further education Information concerning students who have withdrawn from college home economics programs and continued their education at another four-year institution also has been sought in attrition studies. Several studies have reported approximately one-third of the dropouts transferring to another department or college within their institutions or to another college or university (Lawson, 1954; Bourgeois, 1966; Pattison, 1965). Burns (1966) reported about one-fourth of the dropouts had done further college work. Only slightly over 10 percent of the transfers to another institution felt their needs were met more satisfactorily (Lawson, 1954).

Generally, the greatest number of home economics transfer students have changed their major to education (Pattison, 1965; Bourgeois, 1966; Derr, 1966). Among other popular curricula transfer students have pursued are liberal arts, commerce, nursing, or home economics. Three studies reported approximately 10-25 percent of the dropouts taking additional college work remained in home economics programs (Wagner, 1941; Lawson, 1954; Burns, 1966).

Investigation by Bourgeois (1966) of the degrees earned by these transfer students revealed that 53 percent of transfer students completed their degrees. The greatest percentage (67 percent) completed degrees in education, 50 percent in liberal arts and nursing, 38 percent in home economics, and the lowest percentage (29 percent) in commerce. At the time of the study by Derr (1966), 85 percent of the dropouts reported completing one to three years of college, 14 percent had completed four years of college, and 1 percent had earned graduate degrees.

Besides further college work, students had had other educational experiences following withdrawal. Burns (1966) found that 18.3 percent of the dropouts had received on-the-job training, 11.1 percent each had attended business school, evening school, and other educational programs, 3.3 percent had taken correspondence courses, and 2.6 percent had enrolled in a trade school. Only 16.3 percent of the dropouts indicated no further study since withdrawal from the university, or, in other words, approximately five out of six dropouts had returned to study.

In conclusion, employment and educational experiences of students following withdrawal from college are difficult to generalize because the varying time periods between college withdrawal and dates of the different investigations. In recent years more dropouts appeared to be working outside the home, very few of which were in home economics related jobs. Approximately one-fourth to one-third of the home economics dropouts transferred within the institution or to another college or university. The greatest number of transfer students changed their major to education, and, in general, less than 50 percent completed their college degress.

Conceptual Models for Attrition Research in Higher Education

Knoell (1966) criticized past research on college attrition for its microcosmic rather than macrocosmic approach and its lack of a comprehensive model of factors affecting the flow of students in higher education. Based on the review of the research findings, Knoell compiled six assumptions to serve as a framework for future, needed research and the development of a comprehensive model of student flow.

These are the six assumptions presented by Knoell (1966). First, students enter college as freshmen with a wide range of goals, aspirations, motivations, and values. Because of these student differences, attrition can be expected to occur but for various reasons. Secondly, a student's decision to withdraw from college and an institution's attrition rate are each a function of the interaction of the characteristics of the student and those of the particular institution plus outside forces such as family, national crises, and accidents. Thirdly, some student characteristics such as age at matriculation, sex, and educational background are considered static or fixed, while other characteristics such as subject matter interest, values, and personal insights are subject to change as the outcome of education and/or maturation. In addition, withdrawal may be voluntary or involuntary depending upon whether or not the student has free choice to decide to withdraw or persist. The fifth assumption stated that several factors are usually related to a decision to withdraw, but a single factor may trigger the dropout action. Finally, a distinction should be made among dropouts who permanently withdraw from higher education, those who

temporarily interrupt their education, and those who transfer to other institutions.

Based on assumptions similar to those of Knoell (1966), Mac Millan (1970) proposed a prediction model for early identification of potential community college dropouts. The model (see Figure 1) places primary emphasis on identification of antecedent conditions and student characteristics associated with student attrition. Some variables are fixed, while others can be expected to change through education and/or maturation.

Spady (1970) felt that an interdisciplinary or eclectic approach to the study of the dropout process was necessary. He focused on the relationship between the attributes of the students such as dispositions, interests, attitudes, and skills and attributes of the institutional environment including the influences, expectations, and demands from sources such as courses, faculty members, administrators, and peers. The interaction between the student and the college environment provides the opportunity for integration or assimilation into the academic and social systems of the university. Recognizing that a single theoretical model could not likely account for all or even most of the variance in attrition rates within or between institutions, Spady proposed a framework in which several clusters of variables could be treated simultaneously.

The theoretical model Spady (1970) proposed was based on Durkheim's theory of suicide. Durkheim advocated that rejection of social life occurred through suicide when a person was not integrated into the common life of that society. Although dropping out of college is a less extreme break of social ties, Spady illustrated that parallels between the two processes could be drawn. At college the student interacts with the

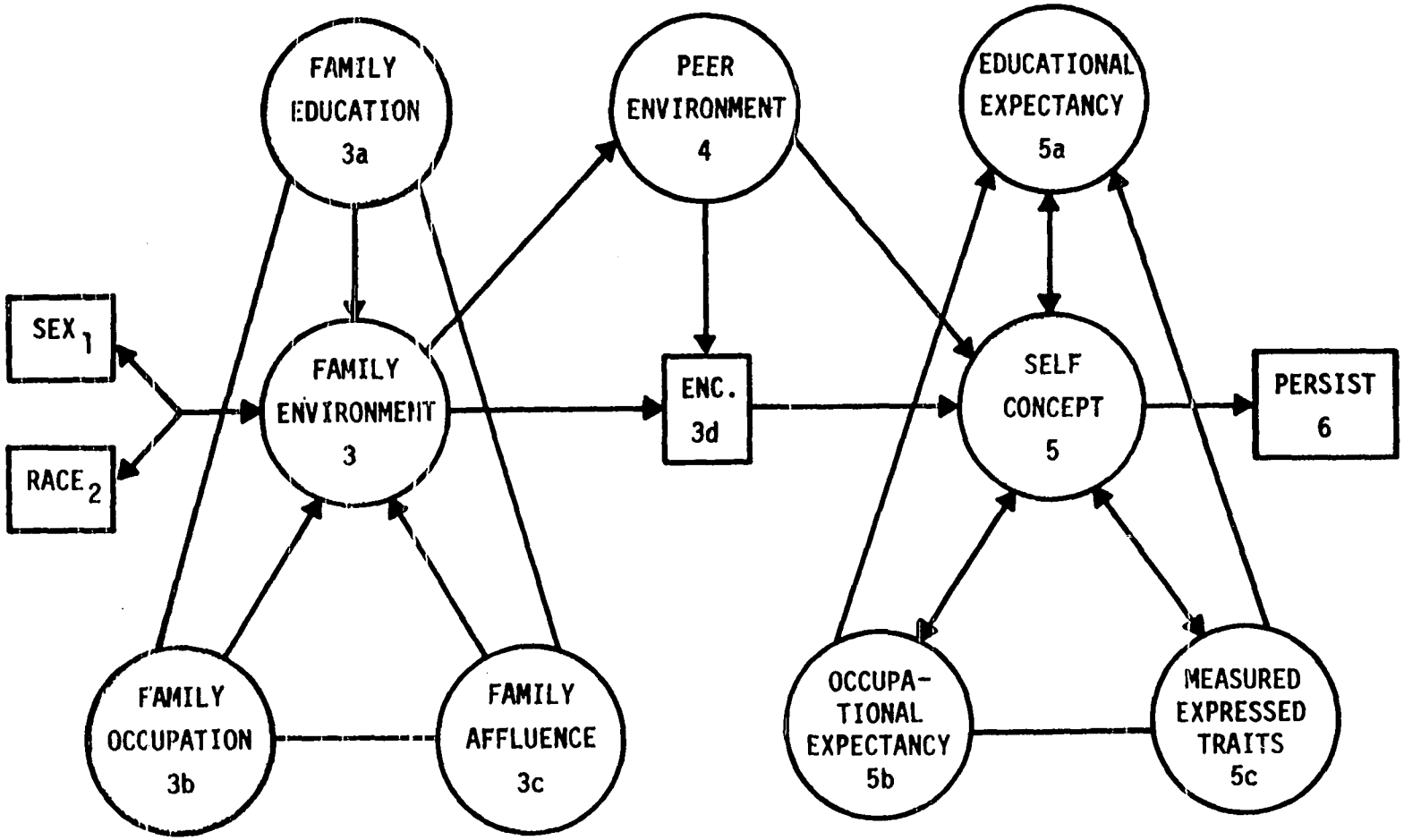


Figure 1. Persistence model for community college students (Mac Millan, 1970, p. 51)

institutional environment and has the opportunity to become integrated into the academic and social systems of the college. The academic system represents grades (extrinsic rewards) and intellectual development (intrinsic rewards). The social system also has two basic components: (1) "normative congruence" which is the term applied to the condition existing when the attitudes, interests, and personality dispositions of the student are compatible with the attributes and influences of the college environment and (2) "friendship support" which refers to the condition of close relationships with others in the social system. According to Durkheim's theory, normative congruence and friendship support are most critical for integration, but the occupational role which Spady related to the academic components is also important. Satisfactory performance in one's occupational role is compared to good grades, and adequate identification with the norms of the occupational groups is compared to satisfactory intellectual growth.

The initial model (see Figure 2) of the dropout process proposed by Spady (1970) consisted of five independent variables; four are: normative congruence, friendship support, grade performance, and intellectual development which influence the fifth, social integration. Since Spady viewed the relationship between social integration and dropping out to be indirect, he proposed the two intervening variables were: (1) satisfaction with one's college environment which reflects satisfactory social and academic rewards and (2) commitment to the college which stems from feelings of integration into the social system and reception of adequate positive rewards. In addition, past research has shown the variables of family background and academic potential to be associated with dropping out. Since the family directly influences academic potential and normative

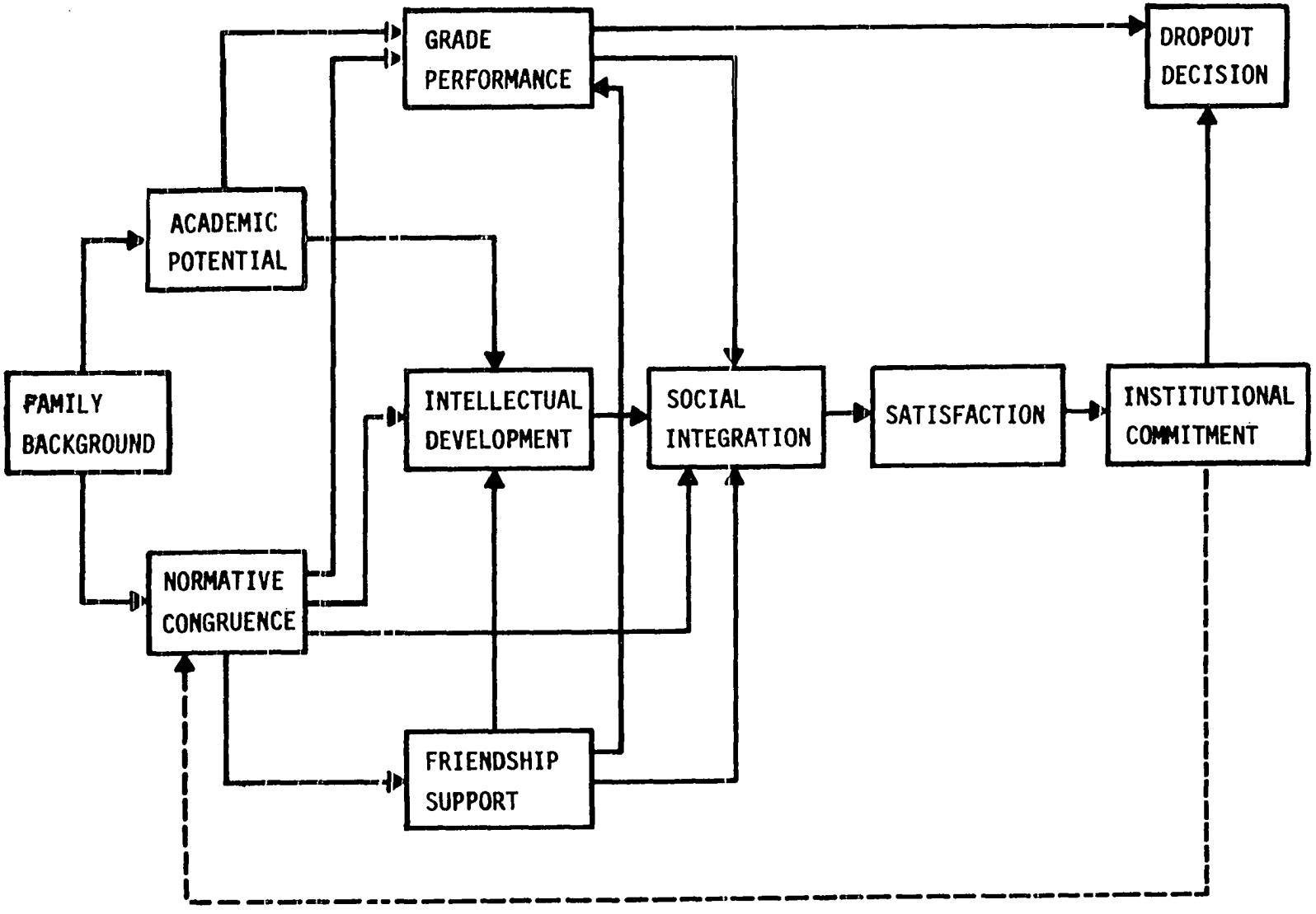


Figure 2. Sociological model of the dropout process in college (Spady, 1970, p. 79)

congruence, this variable is the foundation for the entire system. A direct relationship between grade performance and withdrawal is included for those students who because of low grade performance are academically dismissed, thus, by-passing the theoretical pattern of the model.

Tinto and Cullen (1973) expanded Spady's (1970) theoretical model of the dropout process which was based on Durkheim's theory of suicide by including the theory of cost-benefit analysis in the theoretical basis of their model. They recognized that even when students were integrated in the academic and/or social system of the college, withdrawal still occurred. Factors external to the interaction of the student and college within the institutional system affected the student's decision to dropout. In relation to the cost-benefit theory, students are expected to direct their actions in ways that would maximize the ratio of benefits to costs. If the benefit to be gained by remaining in college and graduating exceeded the costs in time, energies, and resources, the student would likely stay in college rather than pursuing some alternative activity. However, if the costs outweighed the benefits, the student likely would dropout of college. For example, if the job market looked grim for prospective graduates, an increase in the attrition rate could be explained by the cost-benefit theory.

The model (see Figure 3) of the multi-dimensional dropout process as proposed by Tinto and Cullen (1973) diagrams the interaction of the student and institution each with their unique attributes. The model reflects dropout to be a longitudinal process in which the student brings to the institution individual characteristics, family background, and pre-college educational experiences that influence the student's commitment to the goal

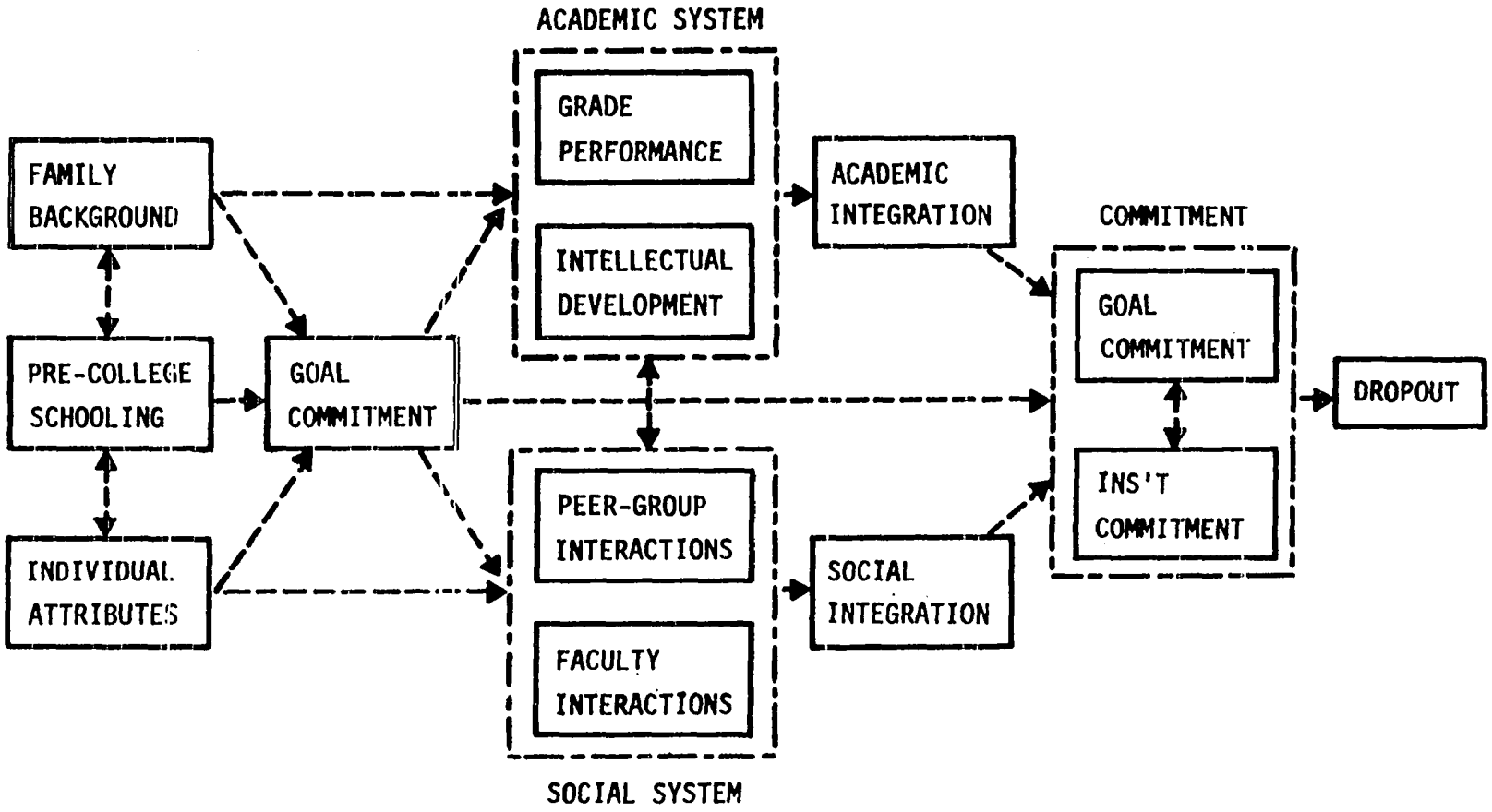


Figure 3. Model for dropout in college (Tinto & Cullen, 1973, p. 42)

of college completion. The degree of student integration in the academic and social systems within the college environment results in new levels of commitment to the goal of college completion and to commitment to the specific institution. For example, if a student is committed to the goal of college completion but not to the institution, withdrawal and transfer to another institution may occur.

In summary, development of conceptual frameworks to guide college attrition research in higher education has been limited, and little research has been conducted to test these models.

Framework Used in the Present Study

Since the primary purpose of this study was to determine why students were withdrawing from the College of Home Economics and who these students were, the framework basically consisted of factors associated with attrition and persistence and reasons for withdrawal.

The models of the multi-dimensional process by Spady (1970) and Tinto and Cullen (1973) presented the interaction of the student with the academic and social systems in the college environment which might result in attrition. Dropout is influenced by characteristics of both elements.

Fundamental to the dropout process are the background variables the student brings to college. The socio-economic status of the parents as measured by their education, occupation, and/or income influences not only the student's chance of going to college but also of graduating. Socio-economic factors affect where the student lives and attends high school and the value the family places on education itself. In addition, family background affects individual intelligence which is reflected in the academic

ability and performance exhibited by students in high school and likely in their educational aspirations or goal commitments.

The college environment can be subdivided into academic and social systems as illustrated in the models by Spady (1970) and Tinto and Cullen (1973). College grade performance determines whether or not the dropout decision is voluntary or involuntary. Even though a student is highly integrated, satisfied, or committed to the institution, he may be forced to leave because of failing grades. Social integration also plays an important part in the dropout process. The lack of friendship support increases the chances for withdrawal.

The framework by Knoell (1966) included the assumption that the reasons for attrition were multiple but that one reason could trigger the withdrawal decision. Knoell also assumed that because students come to college with different characteristics, attrition can be expected but for different reasons. As Knoell proposed and Spady (1970) and Tinto and Cullen (1973) illustrated in their models, the decision to withdraw was a function of the interaction of the student and the institution. Therefore, reasons for withdrawal included in this study pertained to the student (motivation, interests, etc.), the academic component of the college (grade performance, academic challenge, etc.), and the social component of the college environment (friendships, faculty interest, etc.). In addition, Knoell and Tinto and Cullen noted that students may withdraw from college for reasons that have little relationship to the interaction within the college itself. To deal with these outside forces such as family, accidents, and national crises that Knoell described, Tinto and Cullen (1973) included the cost-benefit analysis with their theoretical model of the

dropout process. For example, limited job opportunities in one's major may result in a student's decision to leave school.

Finally, this investigation like other institutional studies sought information concerning employment and further educational experiences of students following their withdrawal from college. Did these former students seek employment within or outside the home? Did they re-enroll at the same institution? Did they pursue additional college work? If so, did they remain in the same major and did they graduate?

Recognizing the complex interaction between the characteristics of the students and the college and influential outside forces, the following factors associated with attrition were selected. In addition, student reasons for attrition and student activity following withdrawal were included in the framework of the present study.

I. Student
   - A. Family background
     1. Parental education
     2. Parental occupation
   - B. High school academic performance
   - C. Individual characteristics
     1. Age
     2. Marital status
   - D. Educational goal
   - E. College financing and employment

II. College environment
   - A. Academic system
     1. College grade performance
     2. College major
     3. College quarters completed
   - B. Social system
     1. College residence
     2. Assistance from university personnel

III. Attrition
   - A. Reasons for withdrawal
   - B. Activity following withdrawal
     1. Employment
     2. Further education

METHOD OF PROCEDURE

The conceptual framework for this study proposed in the preceding chapter served as the basis for the operational plan that will be presented in this chapter. Discussion of the procedure will include objectives of the study, assumptions and limitations, selection of assessment method, development of the instrument, description of the sample and data collection, and data analysis.

Objectives of the Study

The objectives of the study were to: (1) identify reasons for withdrawal of Iowa students in the College of Home Economics at Iowa State University during 1951-1972; (2) compare reasons for withdrawal and background data of students during 1951-1959 (Group I) to those of students during 1960-1972 (Group II); and (3) analyze the reasons for withdrawal in relationship to the student variables: educational levels of the mother and father, occupations of the mother and father, high school rank, age at college entrance, educational goal, student employment, year of college entry, cumulative grade point average, and college quarters completed.

Hypotheses Tested

The two hypotheses tested in this study were:

1. There is no significant difference between Group I and Group II regarding reasons for college withdrawal and the variables: educational level of the parents, parental occupation, high school rank, age at college entrance, marital status, college financing, student employment, educational goal, cumulative grade point

average, college major, college quarters completed, college residence, needed assistance from university personnel, and employment and further education following withdrawal.

2. There is no significant difference between the reasons for withdrawal and the variables: educational levels of the mother and father, occupations of the mothers and fathers, high school rank, age at college entrance, educational goal, student employment, year of college entry, cumulative grade point average, and college quarters completed.

Assumptions and Limitations

Assumptions

The present study was conducted under the following assumptions regarding the dropouts:

1. Respondents would give honest responses on the questionnaire.
2. Respondents would be able to remember their reasons for withdrawal from college.
3. Respondents would be able to interpret the questionnaire items.

Limitations

These limitations of the study were noted:

1. The study was limited to assessment of reasons for attrition as reported by former Iowa students who left college before completing their degrees.
2. The investigation was limited to former Iowa dropouts whose current addresses could be obtained.

3. The population did not include those students who met the criteria defining "dropout" but transferred to another college at Iowa State University or to another university or college and later withdrew or graduated from college.

Selection of Assessment Method

Assessment of student-reported reasons for college withdrawal is made using one of two methods (Eckland, 1964). The first is the exit interview or questionnaire administered at the time of withdrawal. Likely the student's response is to report an "acceptable" reason for leaving especially if the student perceives the statement entering his permanent record. The second assessment method is more apt to encourage the reporting of "true" reasons for withdrawal. This method delays the interview or questionnaire allowing the dropout time to reflect on his past college experiences and promises his anonymity.

If the first method is employed, student records are often incomplete regarding known reasons for withdrawal. Many students merely leave college at the end of the quarter and do not return. Consequently, they are not confronted with the exit interview at withdrawal. Therefore, the second method of assessment using a mailed questionnaire was selected for this study because of the advantages gained over the exit interview. Student reasons for attrition hopefully would not only be more complete but more valid or truthful. In addition, student transcripts at the registrar's office were used to obtain the student's high school rank, last quarter's cumulative grade point average at I.S.U., and confirmation of the year of college entrance.

Development of Instrument

The three components in the student-college interaction presented in the conceptual framework served to identify three problem areas influencing the student's decision to withdraw from college. In other words, reasons for withdrawal pertained to the individual and his academic and social environment.

In search of an instrument for the study, a review was made of literature concerning reasons for attrition in higher education in particular, home economics, and also available instruments. The result was a modification and compilation of reasons primarily from the instruments and findings of Lawson (1954), Bourgeois (1966), Burns (1966), Enge (1962), and Menne ("Dropout Students," Note 1). A tentative list of these reasons for withdrawal pertaining to individual, academic, and social aspects of college life was submitted to a group of experts at Iowa State University to ascertain content validity and obtain recommendations for additions, corrections, and rewording. The experts included representatives from the I.S.U. Dean of Students Office, Admissions, Student Counseling Service, and the College of Home Economics staff.

Based on the student background information sought and the revised list of reasons for withdrawal from college, the questionnaire was developed. A random drawing of reasons was conducted for placement in the questionnaire. Primarily, the response pattern in the first section of the questionnaire dealing with the student's background involved the respondent checking the most appropriate option. The content of the second section of the questionnaire listed possible reasons for student withdrawal, and respondents reacted on a nine-point scale of agreement: "1" strongly

agree, "5" uncertain or not applicable, and "9" strongly disagree. One open-ended item gave respondents the opportunity to list additional reasons for their college withdrawal. An item asking the former students to rank order their three most important reasons for leaving I.S.U. was also included.

The questionnaire was pre-tested by several Iowa State freshmen students who were enrolled in the College of Home Economics spring quarter 1974 and had withdrawn or were withdrawing after completion of the quarter. The researcher personally administered the questionnaire to each subject to observe any difficulties the prospective respondents might encounter completing the questionnaire. According to these try-out results, the questionnaire was revised (see Appendix A).

Description of Sample and Data Collection

The population of this study comprised Iowa residents who had entered the College of Home Economics at Iowa State University during 1951-1972 as first quarter freshmen and left the university within the first or succeeding quarters before receiving a bachelor of science degree in home economics. The population did not include those students who transferred to another college at Iowa State University and later dropped out, transferred to another university or college, or graduated from I.S.U. The population also excluded those students who had dropped out of the College of Home Economics at I.S.U. and, then, returned to complete their undergraduate degree in one of the colleges at I.S.U., including the College of Home Economics. A list of the nongraduates in the population was obtained from the files of the home economics classification office.

To obtain current mailing addresses of these former Iowa students, stamped, double postcards were mailed to the parents whose name and address were complete (see Appendix C). Some file records of students did not include the parent's name and/or address, so additional attempts at the registrar's office and home economics departmental offices were made to secure the missing information. Among the double postcards returned were 84 from Group I (1951-1959) and 100 from Group II (1960-1972) stamped "address unknown," "moved--not forwardable," or "addressee unknown." Six subjects from Group I and five subjects from Group II were reported deceased. In addition, 14 subjects from Group I and 30 subjects from Group II did not meet the criteria for original inclusion in the population. They represented individuals who had applied but never attended I.S.U., had graduated from the university, or were presently enrolled at I.S.U. Thus, the questionnaire was mailed directly to all former students whose current addresses had been secured and who met the population criteria. To increase the percentage of questionnaires returned, a follow-up letter was sent to encourage response (see Appendix C). A summary of response from the postcards and questionnaires mailed is shown in Table 1.

Analysis of Data

As the questionnaires were received, they were checked for completeness of response to the items; questionnaires with incomplete responses were discarded. High school rank and cumulative grade point average for each respondent and the appropriate year of college entrance were recorded on the questionnaires.

Table 1. Number of dropouts, number of postcards and questionnaires mailed and returned, and percentage of returned and usable questionnaires

Group	Dropouts N	Post-cards mailed N	Postcards returned--question-naires mailed N	Questionnaires returned N	Questionnaires returned %	Usable, returned question-naires N	Usable, returned question-naires %
Group I (1951-59)	1026	1014	561	369	66	362	65
Group II (1960-72)	1896	1895	1171	751	64	737	63
Total	2922	2909	1732	1120	65	1099	65

The Dictionary of Occupational Titles (1965) was used to assign a score of "1" to "9" based on the employment status of the mothers and fathers of the respondents. Questionnaire items with open-ended options were also examined and coded directly on the questionnaires. Coding schemes for these items were developed after reviewing responses on 75 questionnaires (see Appendix B). Following the coding process, the information recorded on each questionnaire was key-punched directly on to IBM cards at the Iowa State University Computation Center. Before computation of the data began, a print-out of the data exactly as key-punched on the data processing cards was checked for possible errors. Identified errors were corrected.

The initial analysis of variables regarding the student background variables and reasons for withdrawal consisted of a score analysis for the total group including: frequency distribution, mean, variance, and

standard deviation. Examination of these descriptive statistics gave an overview of background characteristics of the nongraduates, their reaction to the 84 statements of possible reasons for withdrawal, and a rank order of the three most important reasons for leaving I.S.U.

The factor analytic approach was selected for further analysis of the reasons for withdrawal. Through the Little Jiffy, Mark IV (Kaiser, 1970) statistical procedure, the reasons for withdrawal were reduced to clusters of items or reasons which are known as factors. Evaluation of these factors and respective items included examination of the measure of sampling adequacy, Harris eigenvalues, the index of factorial simplicity, the factor intercorrelation matrix, and the factor pattern matrix conventionally scaled. The factor content was determined objectively and subjectively according to the following criteria: an approximate factor loading of .40 or greater, a minimum correlation of approximately .40 between items in the factor, and psychological meaningfulness or congruity of items within the factor. When a factor intercorrelation of .70 or greater occurred, the factor was collapsed and combined with another factor. To facilitate communication, names were given to each factor. Because of the complexity of college attrition, the decision was made to include the single item factors. Scores on the factors for each respondent were computed and keypunched on data processing cards.

A score analysis of the background variables and the factors was computed separately for Group I and Group II. Then, the t test was used to determine significant differences between the two groups regarding background variables and reasons for college withdrawal.

Although use of the t test resulted in several significant differences between Group I and Group II on both background variables and factor scores, further inspection of the differences revealed that the differences were in reality only slight. These significant differences may have occurred merely because of the large sample size. As a result, the correlations between the 11 selected background variables treated as continuous variables and the factors were computed for the total group rather than separately for Group I and Group II.

FINDINGS AND DISCUSSION

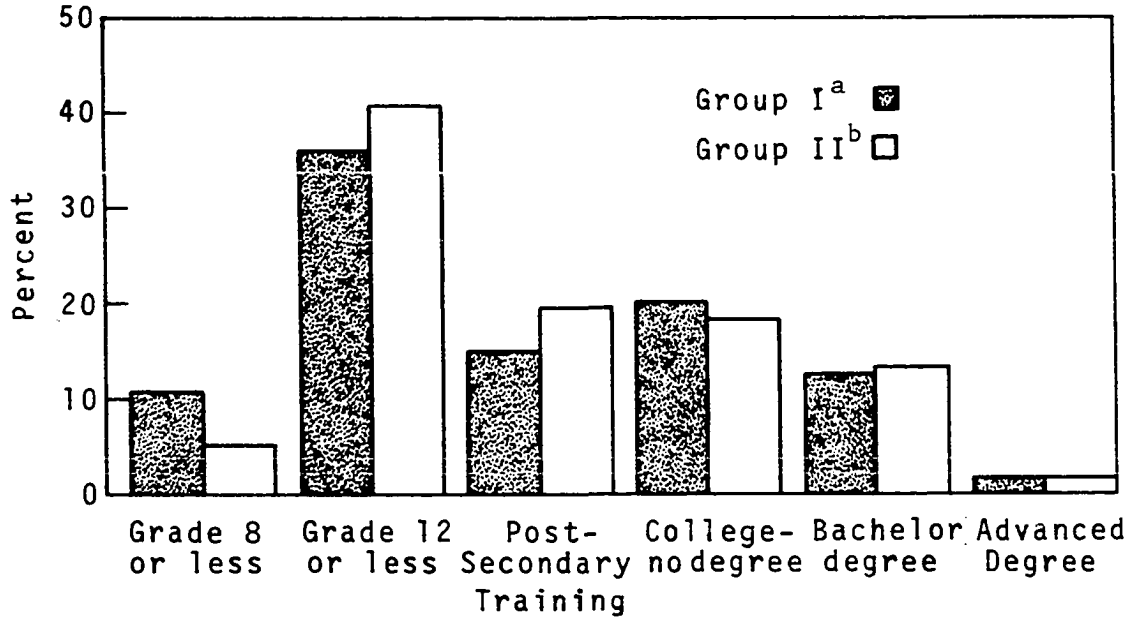
The findings of the study are presented in the following sections: (a) background variables of the nongraduates, (b) most important reasons for withdrawal, (c) derivation of factors, (d) factor differences and factor importance, and (e) relationship of selected background variables and factors.

Background Variables of the Nongraduates

The students in Group I (1951-1959) were found to be significantly different from the students in Group II (1960-1972) on the following ten background variables: educational level of the father, occupation of the father, finance of college expenses, student employment, cumulative grade point average, college major, college quarters completed, college residence, assistance from university personnel needed, and degree completion following withdrawal (see Table 21 in Appendix D). However, further interpretation of these differences revealed that the differences were slight and that the two groups were actually quite similar. The significant differences may have occurred simply because of the large sample size. A description of the similarities and differences between students in Group I and those in Group II concerning all background variables follows.

Educational level of parents

The educational level achieved by the mothers was not significantly different between Group I and Group II; however, the difference between the educational levels of the fathers for the two groups proved to be significant. Figures 4 and 5 pictorially describe the similarities and



[a]Students enrolled 1951-1959. Information true for subsequent tables and figures.

[b]Students enrolled 1960-1972. Information true for subsequent tables and figures.

Figure 4. Educational level of the students' mothers

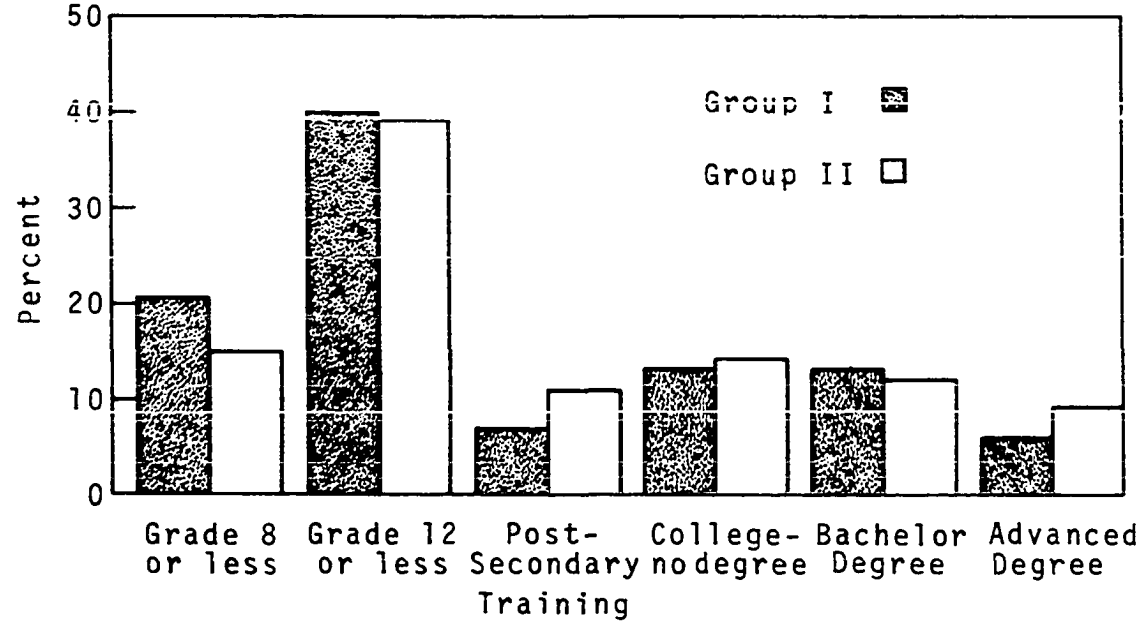


Figure 5. Educational level of the students' fathers

differences in the educational backgrounds of the parents. Although not significant, the trends in the mothers' highest level of education in the 1950's to the 1960's and early 1970's were: (1) decreases in 8th grade education or less and one or more years of college without receiving a degree and (2) increases in a 12th grade education or less; business, vocational, or technical training after completion of high school; and bachelor's degree. The significant differences between the highest educational levels achieved by the fathers of students in Group I and Group II followed this pattern of change from period 1951-1959 to period 1960-1972: (1) a decrease in fathers attaining an 8th and 12th grade education or less and those receiving a bachelor's degree and (2) an increase in fathers receiving business, vocational, or technical training after completion of high school; those attending one or more years of college; and those receiving advanced degrees.

Occupations of parents

The same significant differences existed between Group I and Group II for occupations of parents as existed when considering the educational levels; that is, the difference was significant for the fathers but not for the mothers of the students in the two groups. The majority of mothers were homemakers not employed outside the home, 77 percent in Group I and 67 percent in Group II. Although not significant, the greatest increase in numbers of mothers employed outside the home during 1951-1972 was in office-clerical positions. On the other hand, the occupations of the fathers of the students in Group I and Group II were significantly different. The professional-managerial and farming occupations were the largest,

38 and 45 percent, respectively. While these two categories marked decreases in percentages from the 1950's to the 1960's and early 1970's, the percentages of fathers holding positions in all other occupational categories as defined by the Dictionary of Occupational Titles (1965) increased. In summary, occupations held by both the mothers and fathers of the home economics students have become more diversified during 1951-1972 with the differences between Group I and Group II significant only for fathers. This situation seems to be associated with the significant differences that also existed between the highest educational levels attained by the fathers of the two groups.

High school rank

The high school ranks (HSR) of students in Group I did not differ significantly from those in Group II. Although the range of HSR's was greater for Group II, a larger percentage of the students ranked in the top 50, 94 percent for Group II versus 89 percent for Group I. The percentages of students ranked in the top 10 rankings were practically identical for both Group I and Group II, 24 percent and 23 percent, respectively.

Age at college entrance

The ages of students enrolled in the College of Home Economics at Iowa State University during the two time periods were not significantly different from each other. In fact, approximately three-fourths of the students in both periods were 18 years old when they entered. Figure 6 shows the distribution of students according to age with slightly more 17-year-old students entering in the 1950's and nearly constant percentages in the oldest three age brackets of 19 years and older.

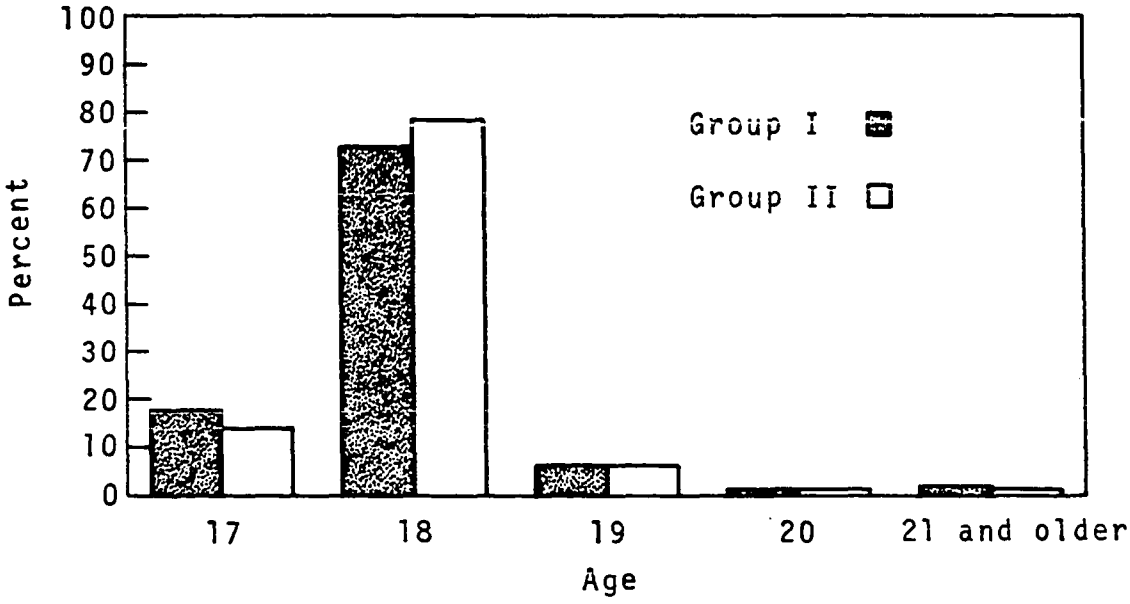


Figure 6. Student age at college entrance

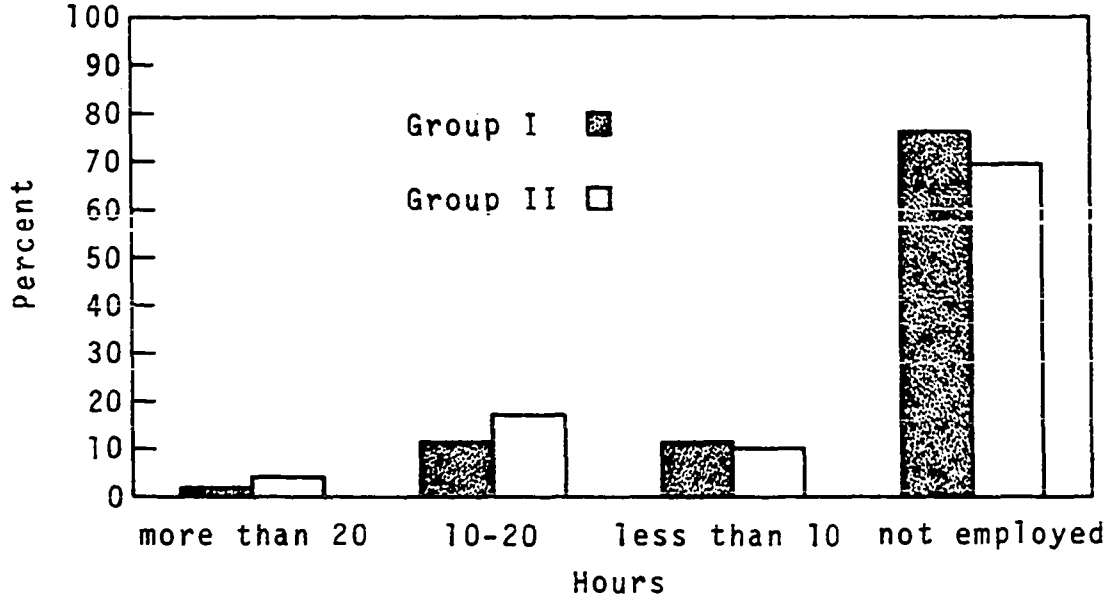


Figure 7. Student employment during college

Marital status

No significant difference existed between the marital status of the students withdrawing from college during the 1950's and the 1960's and early 1970's. An approximate average for the two groups appeared as follows: (1) 55 percent were single students, (2) 35 percent were students engaged to be married, and (3) 10 percent were married students.

Educational goal

No significant differences were found in the educational goals of the students during the 1950's, 1960's, and early 1970's. Eighty-nine percent of the students entering in 1960-1972 expressed intentions of completing four years of college, while 85 percent of the students in 1951-1959 did so. A few more of the students in the first period indicated the desire to complete one or two years of college or were uncertain of their educational goal or had none.

Finance of college expenses

In conjunction with student employment, overall financing of college expenses of home economics students was also found to be significantly different for the two groups. Seventy-eight percent of the parents of students enrolled during 1951-1959 primarily financed their child's college education. However, the same situation existed for only 64 percent of the students during 1960-1972. Eleven percent of the students in Group I reported that they financed their own college expenses, and 8 percent of the students in Group II did so. Ten percent more students in Group II than Group I stated that student loans and/or scholarships were the primary sources of funding for their education. Also, students in Group II more

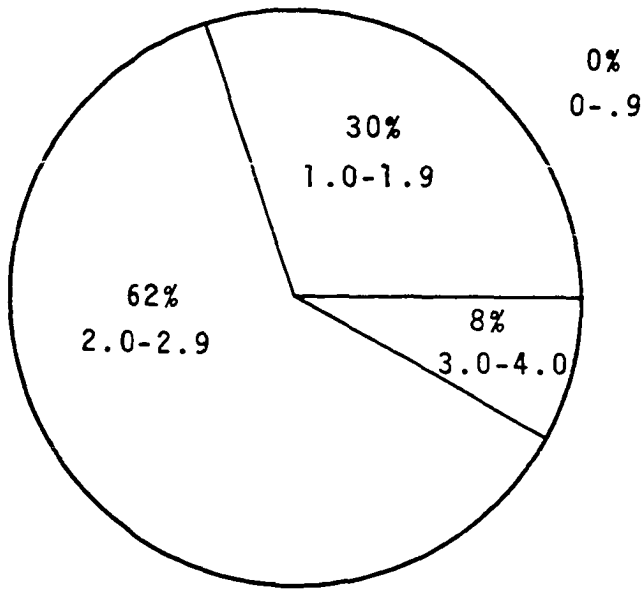
frequently expressed combinations of sources of funding including cooperative financing efforts of parents and students, parents and loans and/or scholarships, and students and loans and/or scholarships. In other words, the trend during 1951-1972 for financing college education was from major support by the parents or students themselves to increased use of scholarships and loans and multiple sources of financial support.

Student employment

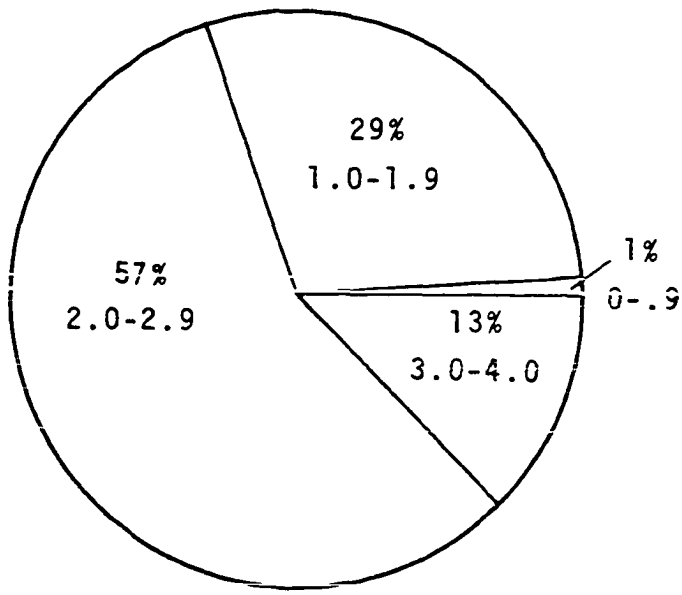
A significant difference existed between the two groups of students on the basis of the number of hours employed during their college years. More students enrolled during 1960-1972 were employed and generally employed more hours per week than those students during 1951-1959. Figure 7 depicts these differences in student employment: Group I, 24 percent employed and 76 percent not employed; Group II, 31 percent employed and 69 percent not employed.

Cumulative grade point average

A significant difference existed between the cumulative grade point averages (GPA) of the students who withdrew during 1951-1959 and those who withdrew during 1960-1972. Approximately 30 percent of the students in both groups withdrew from college carrying a cumulative GPA below the minimum 2.0 required for graduation from Iowa State University. As one might predict and Figure 8 clearly shows, the majority of students had cumulative GPA's from 2.0 to 2.9, 62 percent in Group I and 57 percent in Group II. A difference of approximately 5 percent also existed between the two groups in the 3.0 to 4.0 range with Group II, however, this time having the larger percentage, 13 percent against 8 percent for Group I.



Group I



Group II

Figure 8. Cumulative grade point average[a] at withdrawal for Group I and Group II

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[a]Indicated on a 0- to 4-point scale with 4 = A.

College major

There was a significant difference between the home economics majors of the students in Group I and Group II at time of withdrawal from college. Figure 9 illustrates these differences. The four largest categories or majors with the greatest percentages of students withdrawing in the 1950's were in decreasing order home economics education, major, "not declared," child development, and textiles and clothing. However, during 1960-1972 the largest categories in decreasing size were applied art, child development, home economics education, and textiles and clothing. The applied art department experienced the most drastic increase (7 percent to 24 percent) in dropouts between the two time periods. The percentage of dropouts with child development majors also increased with time from 14 percent to 22 percent. Percentage increases for other majors were slight. The greatest decreases in percentage of students withdrawing were in the home economics education major and major, "not declared" categories; the percentages dropped by 11 percent and 14 percent, respectively.

College quarters completed

A significant difference existed between Groups I and II in regard to the number of college quarters that were completed before withdrawing from college. While the percentage of students in Groups I and II who completed three to five quarters remained nearly identical (42 and 44 percent, respectively), the percentages of those students completing two quarters or less increased 6 percent between time periods and of those students completing six to eight quarters decreased 9 percent (see Figure 10). In

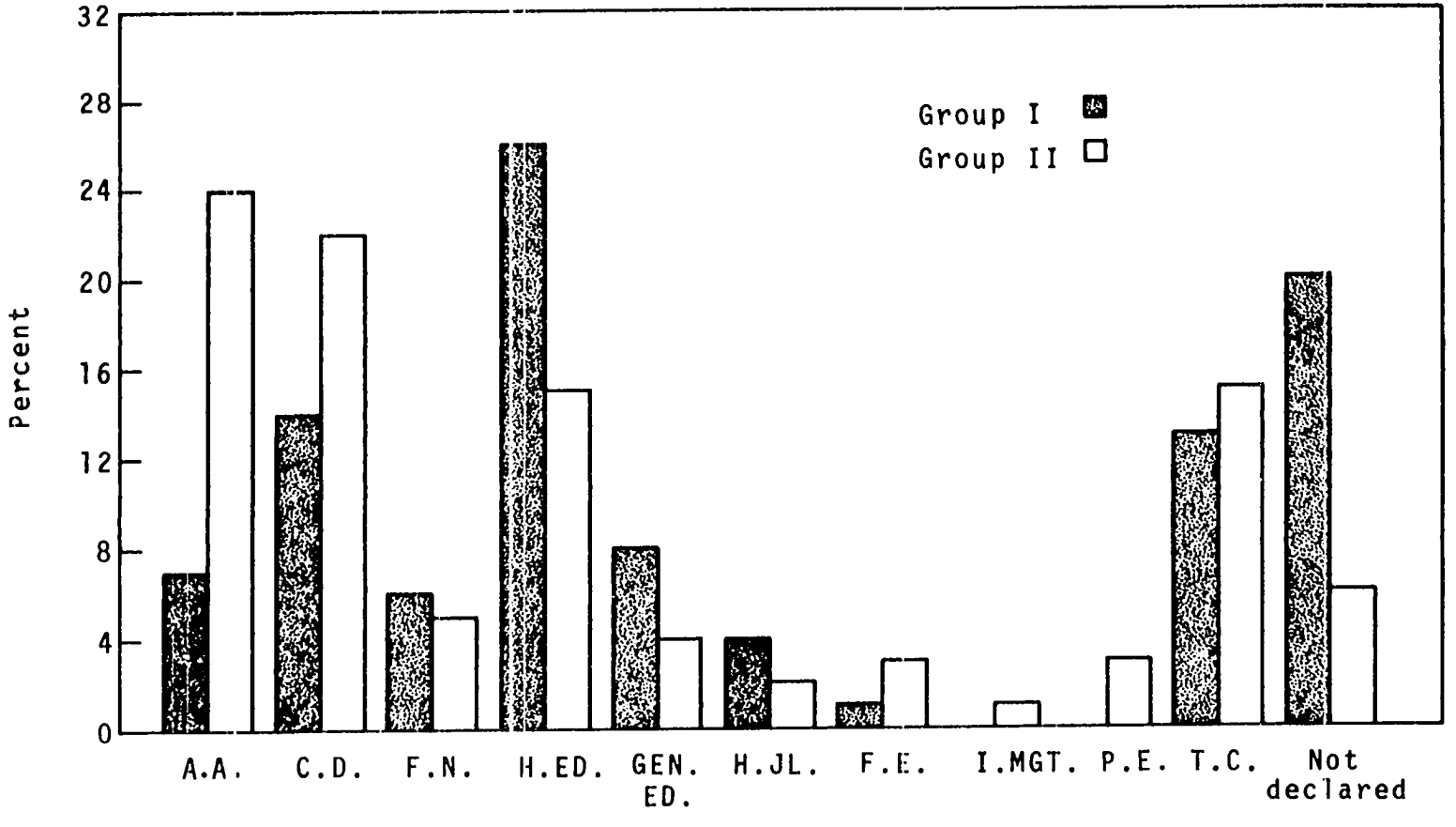

Figure 9. College major of students in home economics

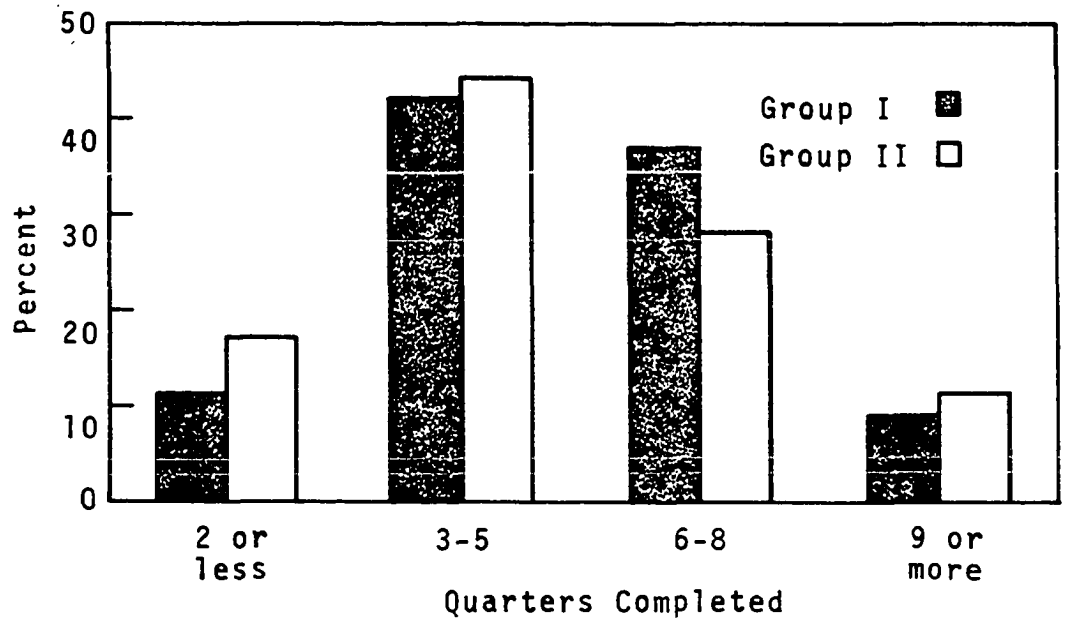

Figure 10. College quarters completed at the time of withdrawal

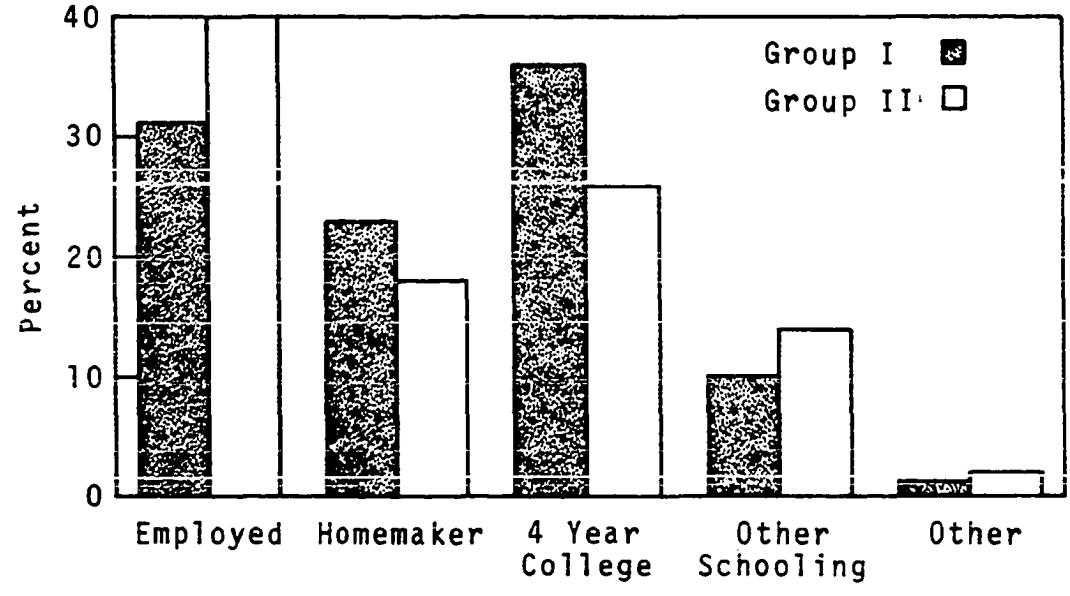

Figure 11. Activity following college withdrawal

other words, students in Group I remained in school longer before withdrawing than did students in Group II.

College residence

A significant difference in the major place of college residence occurred between Groups I and II. Approximately three-fourths of the students in both groups were primarily housed in dormitories. The major movement in housing was from sorority and fraternity living of the 1950's to increased off-campus, married students, and parental housing of the 1960's and early 1970's.

Assistance from university personnel needed before withdrawal

Respondents in Group I and Group II differed significantly in their remarks suggesting assistance from university personnel including teachers, advisers, and counselors that might have been offered them prior to their departure from Iowa State University. Response to this open-ended question resulted in 79 percent of Group I and 74 percent of Group II feeling no further help was needed before their withdrawal. These figures included respondents who had left the item blank which was interpreted as "no help needed" and those who had written definite "no" comments. Of the students who felt further assistance could have been offered them, the greatest needs of Group I and Group II were: (1) more personal, friendly, helpful, encouraging relationships with faculty (Group I, 6 percent and Group II, 9 percent); (2) better counseling and guidance and more information about remedial courses, tutors (Group I, 4 percent and Group II, 6 percent); and (3) more assistance, in particular, in selecting a major and occupation (Group I, 4 percent and Group II, 3 percent). In addition, Group I

students requested more financial help including scholarships and loan advice (3 percent) and less frequently mentioned curriculum, instruction, grading, housing, and health service concerns. In contrast, Group II students felt greater need (3 percent) for improvements regarding curriculum, instruction, grading, and more frequently listed more than one type of assistance and less frequently listed financial help than did students in Group I.

Activity following withdrawal from I.S.U.

The differences between Groups I and II concerning the student's activity after leaving I.S.U. proved not significant. However, changes in the activity pursued by the students that did occur from the period of 1951-1959 to the period of 1960-1972 are as follows: (1) an increase in those students who became employed full or part time, (2) a decrease in those pursuing homemaking, (3) an increase in students enrolling at a business, vocational, or technical school and transferring to an area community college, and (4) a decrease in those transferring to another four-year college or university (see Figure 11).

Re-enrollment at I.S.U.

The re-enrollment patterns did not differ significantly between Group I and Group II. Nearly 85 percent of the nongraduates in both groups never re-enrolled at Iowa State University. Of the students who did re-enroll, the large majority did so only once, followed by those who re-enrolled twice, and a slight few who re-enrolled three or more times. Thus, the re-enrollment record for withdrawals has been consistent over the years 1951-1972. However, these findings must be interpreted with caution

because the sample excluded those students who left and, then, re-enrolled in the College of Home Economics and graduated or re-enrolled at I.S.U. in another college. Therefore, the re-enrollment patterns presented are likely an underestimation of the actual return of former students.

Degree completion following withdrawal

The variable concerning degree completion following withdrawal from Iowa State University proved to be significantly different for the two groups of former students. As Figure 12 clearly illustrates, the greatest differences were among the students who had completed a bachelor's degree and those who had not completed any degree. Thirty-three percent of the students in Group I attained a bachelor's degree after leaving I.S.U., while that percentage dropped to 20 percent for students in Group II. In addition, 55 percent of the students in Group I did not complete a degree, and that figure increased to 64 percent for students in Group II. These differences, perhaps, are not surprising since students in Group II had withdrawn more recently and, therefore, have not had an equivalent number of years in which to attend college and complete their degrees. The larger number of students in Group II still in school working on their degrees and the fewer number of those who had completed advanced degrees would seem to exemplify this fact.

Major of degree completed

Of the students who completed a degree after leaving Iowa State University, no significant difference existed between Group I and Group II concerning the majors of the degrees achieved. Although the difference between the groups was not significant, it is interesting to note that from

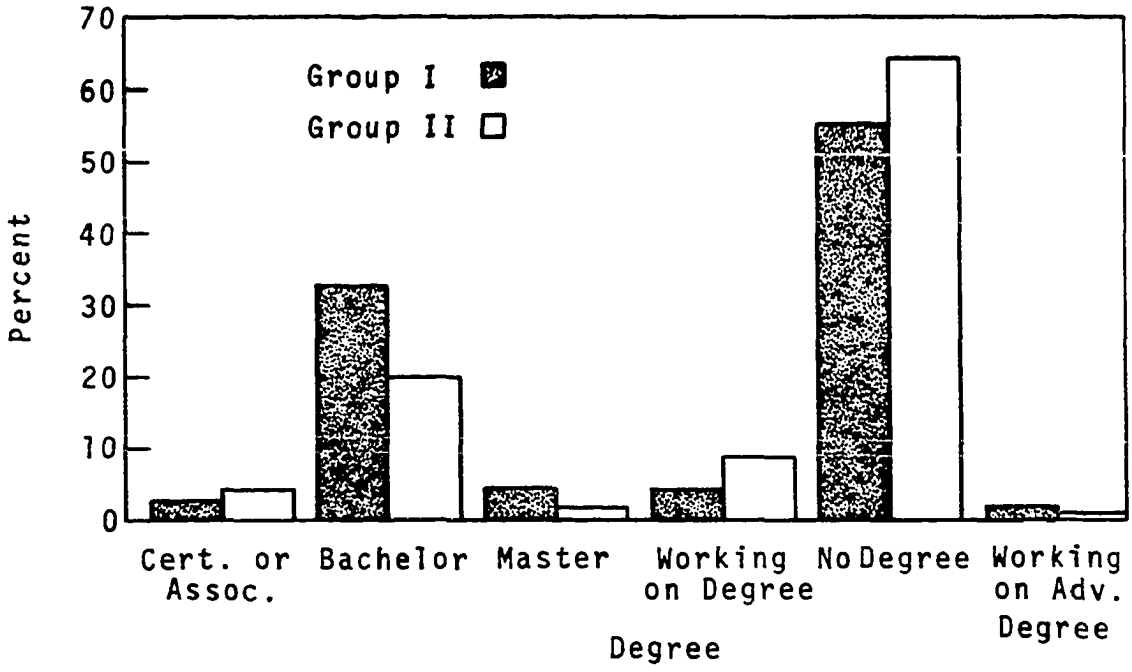

Figure 12. Degree completion after withdrawal from I.S.U.

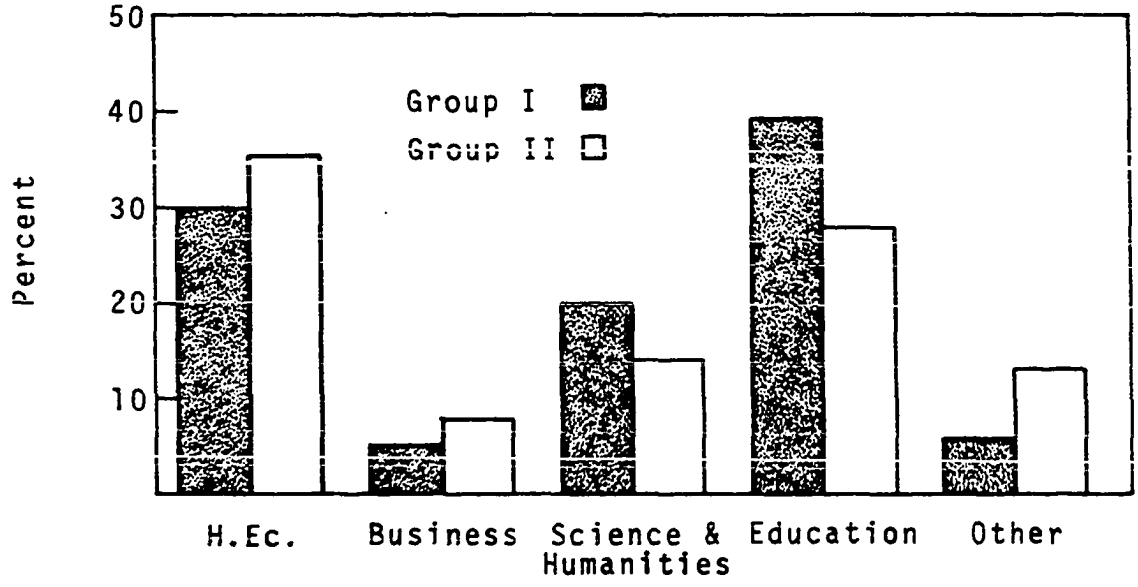

Figure 13. Major of degree completed after withdrawal from I.S.U.

the period of 1951-1959 to the period of 1960-1972 majors attained in business and office occupations, home economics, and miscellaneous majors which primarily represented health occupations increased, while majors attained in science and humanities and education decreased (see Figure 13). The substantial drop in students leaving Iowa State University during 1960-1972 and pursuing a degree in education elsewhere can be attributed partially to the fact that a degree in elementary education was available during 1963-1968 in the College of Home Economics through a major in child development. Prior to 1963, certification in elementary education was not offered at Iowa State University, and since 1969 it has been awarded through the College of Education.

Most Important Reasons for Withdrawal

Before inspecting the students' first, second, and third most important reasons for leaving I.S.U., a brief examination was made of the significant differences between Group I and Group II on the 84 items of reasons for attrition, and a review of the items ranking highest according to student agreement on the response scale was conducted. Thirty-four of the 84 reasons for withdrawal were significantly different between Group I and Group II. These items along with the remaining nonsignificant items are listed in Appendix D (Table 23). The smaller the mean value of the item, the greater was the student agreement that the item expressed their reason for leaving I.S.U. Conversely, the larger the mean value of the item, the greater was the disagreement that the reason pertained to their decision to withdraw. Of the 34 items that were significantly different between Groups I and II, only items 7, 49, and 53 demonstrated a downward

trend in the importance of those reasons for withdrawal; the other 31 items showed an increase in importance.

The rank order of reasons for Group I and for Group II based on item agreement ratings of "1" to "4" is presented in Table 2. Inspection of the lists clearly showed that Group I expressed a lower degree of agreement with most reasons than did Group II. Among the highest ranking items common to both groups were: (1) item 17, I felt too much emphasis was placed on science courses which did not relate directly to my major; (2) item 15, I did not like taking courses I did not need; (3) item 56, I planned to get married; and (4) item 35, I felt a lack of faculty interest in me.

First most important reason

Plans for marriage was clearly the first most important reason for leaving I.S.U. given by students in Groups I and II. An examination of Table 3 showed that approximately one-fourth of the students in both groups cited this reason. Also among first most important reasons common to both groups were financial difficulties and withdrawal to go with husband. More students in Group I withdrew because of their new interest in a major not offered in the College of Home Economics than did those in Group II, while more students in Group II left because of desire to be with their boyfriend, pregnancy, and academic problems.

Second most important reason

Approximately 10 percent of the students in Group I and Group II withdrew from I.S.U. to go with their husbands; this explanation ranked first among the listing of second most important reasons for withdrawal as presented in Table 3. In addition, marriage and uncertainty of college major

Table 2. Rank order of reasons for Group I and Group II rated by 25 percent or more of the students "1" to "4" in the agreement range of the scale

Group I			Group II		
Rank	Item no.	Percent	Rank	Item no.	Percent
1	17	45	1	17	56
2	56	42	2	15	53
3	35	49	3	25	48
4	15	39	3	56	48
5	5	38	4	35	47
6	41	36	5	30	44
6	70	36	6	39	41
7	39	35	7	5	40
8	25	34	8	81	40
9	7	32	9	33	39
9	30	32	9	41	39
9	49	32	10	70	38
10	33	31	11	26	37
11	26	29	12	20	33
12	13	27	12	27	33
12	47	27	12	75	33
13	81	26	13	47	32
14	9	25	14	62	31
			15	40	30
			16	72	28
			17	46	27
			17	69	27
			18	13	26
			18	71	26
			19	32	25
			19	49	25

were cited by both groups. Lack of assistance from adviser and financial difficulties were more frequently given as second reasons for Group I, while too many science courses, desire to be with boyfriend, and pregnancy were reported more important to Group II as secondary reasons for withdrawal from college.

Table 3. Rank orders and percentages of first, second, and third most important reasons given by Group I and Group II[a]

Group I			Group II		
Item no.	Reason	Percent	Item no.	Reason	Percent
	First Most Important Reason				
56	marriage	26	56	marriage	23
7	nonhome economics major	9	20	go with husband	8
71	finances	8	75	be with boyfriend	8
20	go with husband	6	16	pregnancy	5
			71	finances	5
			1	academic problems	4
	Second Most Important Reason				
20	go with husband	9	20	go with husband	10
5	uncertainty of major	5	56	marriage	7
56	marriage	5	17	too much science	5
41	lack of advising	4	75	be with boyfriend	5
71	finances	4	5	uncertainty of major	4
	no response	13	16	pregnancy	4
				no response	7
	Third Most Important Reason				
9	unconcerned about receiving degree	4	17	too much science	5
			56	marriage	5
44	wanted to work	4	5	uncertainty of major	4
49	inadequate high school preparation	4	30	to set goals	4
			75	be with boyfriend	4
56	marriage	4		no response	19
	no response	31			

[a]Percentages below 4 percent are not presented.

Third most important reason

No single reason was outstanding for either Group I or Group II in the category of the third most important reason for leaving I.S.U. In fact, inspection of Table 3 revealed that nearly one-third of Group I and one-fifth of Group II did not state a third reason. Marriage was the only reason jointly cited by approximately the same proportion of group members.

In summary, although differences did exist between Group I's and Group II's rank orders of first, second, and third most important reasons for leaving I.S.U., these differences were not significant (see Table 21).

Other reasons for college withdrawal

In response to the open-ended item providing the students in Group I and Group II an opportunity to list other reasons for their withdrawal from Iowa State University, 83 and 84 percent of the respondents, respectively, left the item blank. Thus, the researcher assumed that the 84 questionnaire items had quite adequately covered their reasons for withdrawing. Of the remaining students in both groups that gave additional reasons for withdrawing from I.S.U., the majority cited the following reasons which are presented in rank order for the groups as a whole beginning with the most frequently cited reason:

(1) desire for an education degree, primarily in elementary education;

(2) trouble passing predominately mathematics, chemistry, physics, but also English and foreign languages;

(3) miscellaneous reasons ranging from religious convictions to social probation, too great a distance between classes to preference for a larger university and too much involvement in campus activities to a variety of personal reasons;

(4) interest in receiving a fine or liberal arts education;

(5) interest in a health occupations major such as nursing, physical therapy, and pharmacy;

(6) desire to complete post-high training or education with less formal instruction and more on-the-job experience that would lead to employment in less than four years including business and secretarial school, cosmetology, and technical training.

Although not significant (see Table 21), the major difference between Group I and Group II concerning these additional reasons was that the desire for an education degree especially in elementary education was by far the outstanding other reason for students in Group I. On the other hand, Group II showed a considerable reduction in the number of students leaving I.S.U. to receive an education degree and an increase in the other four reasons presented above. All four of these reasons had approximately equal representation among students in Group II with scholastic difficulties with science and mathematics courses having the greatest frequency.

Derivation of Factors

Through the exploratory factor analysis procedure using the Little Jiffy, Mark IV (Kaiser, 1970), 15 multiple item factors emerged from the original 84 reasons for withdrawal which accounted for the clustering of 67 items. Located in Appendix D (Table 24) are these factors and their respective Harris eigenvalues, means, variances, and standard deviations. The remaining 17 items which did not cluster were retained and handled independently as single item factors. The list of these factors and their corresponding means, variances, and standard deviations appears in Appendix D (Tables 25 and 26). The overall measure of sampling adequacy of each

variable was .96 which was interpreted as superb and the index of factorial simplicity for each variable was .80 which was evaluated as commendable.

The 15 multiple item factors identified by the Little Jiffy, Mark IV (Kaiser, 1970) had Harris eigenvalues of 2.41 and greater. Since all of the items did not fall discretely into one of these 15 factors, factor content and final acceptance of factors required further considerations. Primarily, the content of the factors was determined objectively through the selection of items with high loadings on the factors. A factor loading of .40 or greater served as the guideline. In one instance, the factor intercorrelation matrix was also reviewed, and a high correlation of .70 or greater was a criterion for transferring an item on one factor to another factor. In addition, the items with factor loadings below .40 were examined subjectively for psychological meaningfulness and similarity to other items within the factor and to the underlying conceptual unity of the factor itself. The name assigned to each multiple item factor attempted to typify the underlying concept that made items within the factor cohesive. A list of these multiple item factors and the names assigned is as follows:

Factor 1: Social inadequacy
Factor 2: Lack of staff support
Factor 3: Academic difficulties
Factor 4: Scheduling problems
Factor 5: Financial difficulties
Factor 6: Lack of academic challenge
Factor 7: Dissatisfaction with program of study
Factor 8: University too large
Factor 9: Coursework difficult and demanding
Factor 10: Lack of job information and opportunities
Factor 11: Poor study habits and academic preparation
Factor 20: Dissatisfaction with local environment
Factor 21: Personal and social barriers
Factor 22: Lack of commitment to college degree
Factor 23: Marriage

The resulting 15 multiple item factors are presented more completely in the following discussion and Tables 4 through 18 including the factor name, items contained in the factor, and corresponding factor loadings. The higher the factor loading, the greater is the commonality of the item to the underlying concept of the factor.

The four items that compose Factor 1 all involve the student's relationships with other students which resulted in feelings of loneliness, social inadequacy, and nonacceptance. All items had factor loadings that ranged between .65 and .76.

Table 4. Items and factor loadings for Factor 1: Social inadequacy

Item		Factor loading
8[a]	I did not feel accepted by the other students.	.65
28	I found I.S.U. too large to get acquainted with other students.	.65
36	I felt socially inadequate.	.76
80	I could not make close friends.	.71

[a]Item numbers in Tables 4-18 correspond to those in the questionnaire.

Lack of staff support felt by students who had withdrawn is reflected in four items in Factor 2. The factor loadings of the items were all quite high.

Table 5. Items and factor loadings for Factor 2: Lack of staff support

Item		Factor loading
35	I felt a lack of faculty interest in me.	.65
39	I did not receive encouragement from my teachers.	.60
41	I did not receive enough assistance from my academic adviser.	.87
43	I did not like my academic adviser.	.77

The content of Factor 3 centers on scholastic difficulties which resulted in temporary enrollment status or mandatory withdrawal being imposed upon the student who carried a cumulative grade point average below 2.00 required for graduation from Iowa State University. The two items in this factor also had fairly high factor loadings.

Table 6. Items and factor loadings for Factor 3: Academic difficulties

Item		Factor loading
1	I was dropped or about to be dropped from enrollment by the academic standards committee.	.69
3	I would have been on temporary enrollment if I had continued.	.70

Factor 4 represents scheduling problems which confronted students and contributed to their decision to leave I.S.U. Both factor loadings were high indicating factor concept unity.

Table 7. Items and factor loadings for Factor 4: Scheduling problems

Item		Factor loading
29	I could not get into my required and/or elective courses because of their full enrollment.	.78
31	I could not fit my required and/or elective courses into my schedule at the times they were offered.	.74

Student responses in agreement with the two items making up Factor 5 describe financial problems that influenced the decision of these students to withdraw. Again, factor loadings were both quite high.

Table 8. Items and factor loadings for Factor 5: Financial difficulties

Item		Factor loading
71	I was experiencing financial difficulties.	.75
74	I could not afford the expensive supplies and materials for my courses.	.60

An individual strongly agreeing with the three items in Factor 6 reflects a student who withdrew because she did not find intellectual stimulation and/or academic challenge at college. Factor loadings ranged from .60 to .82.

Table 9. Items and factor loadings for Factor 6: Lack of academic challenge

Item		Factor loading
37	I thought the quality of instruction was poor.	.60
55	I did not find the coursework intellectually stimulating.	.79
57	I did not find the coursework challenging.	.82

Dissatisfaction with the program of study was expressed by respondents who agreed that the items comprising Factor 7 had caused them to leave I.S.U. Among these dissatisfactions were too much emphasis on home economics and science courses, lack of electives and practical experiences, and required courses unnecessary in meeting their needs. The item factor loadings ranged widely from .35 to .85.

Table 10. Items and factor loadings for Factor 7: Dissatisfaction with programs of study

Item		Factor loading
15	I did not like taking courses I did not need.	.48
17	I felt too much emphasis was placed on science courses which did not relate directly to my major.	.35
19	I felt too much emphasis was placed on home economics courses which did not relate directly to my major.	.39
70	I was disappointed in not having elective courses until my junior and/or senior year(s).	.85
72	I did not have enough electives.	.80
76	I had no opportunity for practical experience in my major prior to my senior year.	.43
78	I was not satisfied with the variety of courses offered in my major.	.49

Agreement with the two items that comprise Factor 8 suggests that the large size of the university affected the student's decision to withdraw. Factor loadings were fairly moderate.

Table 11. Items and factor loadings for Factor 8: University too large

Item		Factor loading
26	I did not like being treated like a number.	.46
33	I found the classes too large.	.44

Student agreement with the reasons for leaving I.S.U. that clustered to form Factor 9 characterizes one who felt anxiety, pressure, and inferiority because of difficult and demanding coursework. The factor loadings of the items indicated a fairly cohesive cluster.

Table 12. Items and factor loadings for Factor 9: Coursework difficult and demanding

Item		Factor loading
21	I felt too much pressure due to the quarter system of class schedules.	.70
23	I felt inferior because of the academic competition.	.57
24	I had no time left after studying to do anything else.	.63
25	I felt grades were emphasized rather than what one had learned.	.46
62	I became overly anxious and/or worried.	.46
69	I felt the courses were too hard.	.73
79	I thought the courses were too detailed.	.62
81	I felt too much material was presented in too short a time in the courses.	.79

Lack of job information and opportunities was expressed as a reason for withdrawal by subjects who agreed with the items included in Factor 10. The factor loadings for these items indicated that this factor was less unified than others.

Table 13. Items and factor loadings for Factor 10: Lack of job information and opportunities

Item		Factor loading
59	I could not get on-the-job training.	.33
61	I learned that job opportunities were not present for graduates in my major.	.44
63	I could not get much information about jobs available in different majors.	.56
67	I did not know what the job in my major field was like in order to see why some courses were worthwhile.	.38

Factor 11 describes students who withdrew from college for reasons involving inadequate secondary preparation, study habits, independence, and motivation. Conditions necessary to prevent or improve these situations apparently were not available. The range of the factor loadings was .29 to .67.

Factor 20 represents student dissatisfaction with the immediate college environment including unhappiness with the various housing and living arrangements as well as relationships between the residences, the small size of Ames, and the limited city public transportation system. The values of factor loadings were .38 to .78.

Table 14. Items and factor loadings for Factor 11: Poor study habits and academic preparation

Item		Factor loading
27	I was not motivated to study.	.41
47	I did not know how to study.	.67
49	I had inadequate high school preparation for college work.	.56
51	I needed remedial courses that were not offered.	.49
65	I did not have enough information concerning I.S.U.'s academic requirements in my major before enrolling.	.29[a]
82	I lacked responsibility and independence.	.42

[a]Loading on original factor.

Table 15. Items and factor loadings for Factor 20: Dissatisfaction with local environment

Item		Factor loading
4	I was disappointed in my housing arrangement.	.78
10	I thought the dormitory and Greek systems had nonprogressive living arrangements.	.76
12	I could not easily get public transportation from the university to different areas in Ames.	.50
18	I felt the city of Ames was too small.	.43
32	I did not like the relationship between the Greek residences and dormitories.	.38
77	I felt you should be able to live in a dormitory without having to eat there.	.38

The underlying conceptual unity of Factor 21 appears to be a personal or social barrier that resulted in student withdrawal from college. Examination of the nine items that clustered with factor loadings of .40 to .81 to form this factor reveals the variety of barriers that had existed for the students prior to their departure.

Table 16. Items and factor loadings for Factor 21: Personal and social barriers

Item		Factor loading
7	I became interested in a major other than home economics.	.46
38	I was overburdened by my employment.	.63
42	I wanted to travel.	.40
50	I felt isolated because of my older age.	.81
53	I got a chance to transfer to my more preferred college choice.	.74
54	I found the means of transportation from my hometown to the university very limited.	.43
66	I was married and one of us had to quit for financial reasons.	.52
68	I was refused a student loan because my parents' income was too high.	.56
73	I was not pledged by the sorority (fraternity) of my choice.	.50

Students who agreed with the items in Factor 22 expressed a lack of commitment to achieving a college degree. This lack of commitment was indicated in several ways including negative feelings toward school, a desire to work, and a desire to determine life goals. Factor loadings in this cluster ranged from .50 to .74.

Table 17. Items and factor loadings for Factor 22: Lack of commitment to college degree

Item		Factor loading
9	I was not concerned about receiving a college degree.	.62
30	I wanted to decide what I wanted to do.	.50
40	I was tired of school.	.71
44	I wanted to work.	.53
45	I did not like going to school.	.74

Courtship and marriage seem to describe Factor 23. Respondents who were in agreement with these clustered reasons withdrew to be nearer their boyfriend (girlfriend), to marry, or to follow their husband. The factor loadings of the items were .36, .54, and .61.

Table 18. Items and factor loadings for Factor 23: Marriage

Item		Factor loading
20	I wanted to go with my husband.	.54
56	I planned to get married.	.61
75	I wanted to be closer to my boyfriend or girlfriend.	.36

Factor Differences and Factor Importance

An examination of the differences on factors between Group I and Group II was based on computation of the t test and inspection of frequency

distributions of the response patterns for the two groups. The importance of factors was determined by examining the frequency distributions of responses, noting particularly those of strong agreement and disagreement, and by rank ordering the factor mean scores.

Before determining the importance of the 32 factors, which comprised single, couplet, and multiple items measuring basic reasons for leaving I.S.U., use of the t test and an examination of the frequency distribution of responses served to distinguish differences between Group I and Group II on the factors. Since all factors did not contain an equivalent number of items, adjusted means for the couplet and multiple item factors were calculated by dividing each factor mean score by the number of items within the factor. Thus, the resulting mean scores had a common base and could be interpreted easily according to the response scale: "1," strongly agree; "5," uncertain or not applicable; and "9," strongly disagree. All 32 factors with the adjusted means and t values for Group I and Group II are listed in Appendix D (Table 27). Inspection of the means indicated that on the majority of factors the two groups of students did not differ significantly in their responses. However, the following 13 factors proved to be significantly different for Group I and Group II:

(1) Factor 4: Scheduling problems
(2) Factor 5: Financial difficulties
(3) Factor 7: Dissatisfaction with the program of study
(4) Factor 8: University too large
(5) Factor 9: Coursework difficult and demanding
(6) Factor 10: Lack of job information and opportunities
(7) Factor 15: Self-actualization
(8) Factor 16: Lack of a quiet residential study area
(9) Factor 17: Pregnancy
(10) Factor 18: Incompatible beliefs and values
(11) Factor 20: Dissatisfaction with the local environment
(12) Factor 22: Lack of commitment to college degree
(13) Factor 23: Marriage

The differences between the means of the two groups on these factors all represented a shift in response toward more agreement or less disagreement for Group II than for Group I. In other words, these factors or reasons for college withdrawal appeared to be more important to students in Group II than those in Group I.

An examination of the means does not reveal the response distributions, therefore, similarities and differences of factor response patterns for the two groups are illustrated in Figures 14, 15, and 16 (Appendix E). Figure 14 pictures the multiple item factors, and Figures 15 and 16 present the couplet and single item factors. The frequency distributions of response patterns that were significantly different between Group I and Group II are noted with asterisks. The curves representing these significantly different response patterns were less congruent than those curves on factors which were not significantly different. The graphs also show that the curves representing Group II on the 13 significantly different factors depicted stronger agreement and less strong disagreement.

However, the two curves of the 13 factors actually were not drastically different nor were the interpretations of the factor mean score differences. Therefore, the rank order of factors in importance of reasons for college withdrawal were established for the combined groups. This rank order of factors by factor mean values for the total group is presented in Table 19. The five most important factors or reasons for withdrawal were:

(1) Factor 23: Marriage
(2) Factor 24: Uncertainty of college major
(3) Factor 2: Lack of staff support
(4) Factor 8: University too large
(5) Factor 7: Dissatisfaction with program of study

These factors all had adjusted means below 6.00. Examination of the distribution of responses for both groups of students on these important factors revealed curves that were more skewed to the left and indicated more agreement with the reason than did the curves on the less important factors.

Table 19. Rank order of the 32 factors by mean values for total group

Rank	Factor number	Factor name	Adjusted mean
1	23	Marriage	5.01
2	24	Uncertainty of major	5.41
3	2	Lack of staff support	5.60
4	8	University too large	5.65
	7	Dissatisfaction with program of study	5.65
5	14	Lack of freedom to explore other curricula	6.01
6	15	Self-actualization	6.17
7	22	Lack of commitment to college degree	6.19
8	9	Coursework difficult and demanding	6.22
9	11	Poor study habits and academic preparation	6.32
10	13	Curriculum inadequate for career preparation	6.34
11	5	Financial difficulties	6.44
12	10	Lack of job information and opportunities	6.52
13	21	Personal and social barriers	6.60
14	4	Scheduling problems	6.70
15	25	Immaturity	6.73
16	16	Lack of quiet residential study area	6.74
17	26	Family problem	6.86
18	27	Health complications	6.90
19	20	Dissatisfaction with local environment	6.91
20	3	Academic difficulties	7.01
21	18	Incompatible beliefs and values	7.06
22	6	Lack of academic challenge	7.07
23	28	Be closer to home	7.08
24	12	Desire for slower life style	7.14
	17	Pregnancy	7.14
25	1	Social inadequacy	7.20
26	29	Did not want to enroll at I.S.U.	7.28
27	32	Roommate incompatibility	7.31
28	19	Advised to leave	7.52
29	30	Disliked types of I.S.U. students	7.79
	31	Ames too large	7.79

Relationships of Background Variables and Factors

Eleven background variables were correlated with the 32 factors or reasons for home economics student withdrawal from Iowa State University. The following student background variables did not correlate with any factors at .120 or above: (1) education of mother, (2) occupation of mother, (3) age at college entrance, and (4) educational goal. Background variables and factors correlating at .120 or above (see Table 20) were interpreted as significantly different than zero or no correlation and appear in the following discussion.

Education of father

A positive association was found between the education of the student's father and the student reporting Factor 5: Financial difficulties, as a reason for leaving I.S.U. (see Table 20). The lower the numeric scores for the father's education were, the lower was the level of education attained by the father. The lower the numeric scores on Factor 5 were, the more strongly the student felt financial problems were the cause of withdrawal. Consequently, students with fathers having less education more frequently voiced financial difficulties as a reason for withdrawal than did students with fathers having more education.

Occupation of father

The negative correlation between the occupation of the student's father and Factor 5 as given in Table 20 was interpreted as follows: students whose fathers held unskilled, semi-skilled, or skilled occupational positions tended to list financial reasons for withdrawal from college, whereas students whose fathers were in professional and managerial

Table 20. Correlations of certain background variables with factors

Factors	Background variables[a]						
	A	B	C	D	E	F	G
1							.200
2						.213	
3			-.237			.424	
4				-.183			
5	.161	-.138			.243		
6						.132	
7						.162	
8						.189	
9			-.161			.308	
10				-.127			
11			-.248			.429	
16						.135	
18				-.149			
19						.165	
20				-.132			
22							.123
23			.139	-.129		-.220	
24						.126	
25			-.132			.255	.156
28							.200

[a]A, education of father, 8th grade or less to advance degree; B, occupation of father, professional to unskilled; C, high school rank, 1 to 99; D, year of college entry 1951-1972; E, student employment, more than 20 work hours to not employed; F, cumulative grade point average 0 to 4.0; G, college quarters completed, two quarters or less to nine or more quarters.

positions did not. In other words, the lowest numeric scores for the father's occupation represented the professional and managerial positions, and the lowest scores on Factor 5 represented strong agreement that financial problems were the cause for college withdrawal.

High school rank

As shown in Table 20, high school rank correlated negatively with four factors and positively with one. Since a high school rank of 1 was top and 99 was the bottom, negative correlations indicated that those with top rankings disagreed that the factor was a reason for withdrawal, while those with low rankings agreed that it was a reason. The positive correlation reflected the reverse relationship between rankings and agreement or disagreement with the factors. Students with lower high school ranks tended to report more frequently academic difficulties as their reason for college withdrawal than did students with higher high school ranks (Factor 3). Students with lower high school ranks tended to find the coursework so difficult and demanding that they withdrew from college, whereas students with higher high school ranks did not (Factor 9). Poor study habits and deficient secondary academic preparation as reasons for withdrawal appeared to be associated with students having low high school ranks and not associated with students having high high school ranks (Factor 11). Students with higher high school ranks tended to agree marriage was a reason for withdrawing from the College of Home Economics, while students with lower high school ranks disagreed (Factor 23). There was a tendency for students with lower high school ranks to drop out of college because they felt they were not ready for college and needed time to mature; however, students with higher high school ranks tended not to report such feelings (Factor 25).

Year of college entry

The student background variable of year of college entry correlated negatively with five factors as shown in Table 20. The factor or reason

for leaving I.S.U. was more important for students who enrolled in college during the later years of the study. Specifically, there was a tendency for students in the 1960's and the early 1970's to report scheduling problems and a tendency for students in the 1950's not to be confronted with them (Factor 4). Students entering in the 1960's and 1970's tended to feel lacking in job information and job opportunities, whereas the students entering in the 1950's tended to reflect having sufficient job information and opportunities (Factor 10). Students who enrolled during 1960-1972 tended to feel in constant defense of their beliefs and values, while those who enrolled in the 1950's tended not to be confronted with opposing beliefs and values (Factor 18). The local environment including housing and transportation tended to be unsatisfactory to students in the later period and satisfactory to students in the previous period (Factor 20). There was a tendency for students enrolled during 1960-1972 to cite marriage as a reason for withdrawal from college and a tendency for students enrolled during 1951-1959 not to cite it (Factor 23).

Student employment

As shown in Table 20, a positive relationship existed between the hours of student employment and Factor 5 concerning financial difficulties. A low numeric score on the employment variable indicated 20 or more work hours. Thus, students who were employed full or part time tended to report financial difficulties as influencing their decision to withdraw from college, while students not employed tended not to report reasons concerning finances.

Cumulative grade point average

Twelve factors exhibited some relationship to cumulative grade point average (GPA), 11 positively correlated and one negatively correlated (see Table 20). Basically, positive correlations meant that the lower the cumulative GPA, the more strongly the student agreed that the factor contributed to college withdrawal. The negative correlation demonstrated the reverse relationship. Students with lower cumulative GPA's tended to indicate that the lack of staff support influenced their decision to withdraw from Iowa State University, while students with higher averages tended not to mention staff support as a reason influencing withdrawal (Factor 2). Reasons concerning academic difficulties seemed to be associated with dropouts having the lower cumulative GPA's; in contrast, these reasons did not seem to be associated with dropouts having the higher cumulative GPA's (Factor 3). The lack of academic challenge tended to be a reason for withdrawal for students earning lower cumulative GPA's and not for students earning higher averages (Factor 6). The lower the cumulative GPA's of students were, the more they tended to respond that dissatisfaction with the program of study was why they dropped out of school, while the higher the cumulative GPA's were, the less the students tended to give that reason (Factor 7). Reasons related to the large size of Iowa State University seemed to have a negative effect on students with lower cumulative GPA's that resulted in their withdrawal from college; however, students with higher cumulative GPA's tended not to attribute the large university size as a reason for their departure (Factor 8). The lower the cumulative GPA's of the students were, the greater the tendency was for students to leave college because of the difficult and demanding coursework and vice versa

for students with higher grade point averages (Factor 9). Reasons concerning poor study habits and secondary academic preparation tended to be given more frequently by students with lower cumulative GPA's and less frequently by students with higher averages (Factor 11). The lack of a quiet study area at the student's residence tended to have contributed to withdrawal of students with low cumulative GPA's rather than those with high ones (Factor 16). Students with low cumulative GPA's tended to leave college on the advice given by their advisers or counselors, while students with high GPA's tended not to give this reason for leaving college (Factor 19). Students with low cumulative GPA's tended to disagree that marriage was their reason for leaving I.S.U., while students with high averages tended to agree that marriage was a reason (Factor 23). Uncertainty of college major was a reason that tended to be offered more frequently by students with lower cumulative GPA's and less frequently by students with higher cumulative GPA's (Factor 24). The lower the cumulative GPA's of the students were, the greater was the agreement that immaturity was a reason for leaving Iowa State University, and the higher the cumulative GPA's of the students were, the greater was the disagreement that immaturity was a reason (Factor 25).

College quarters completed

The number of college quarters completed correlated positively with four factors as presented in Table 20. In general, low numeric scores on this background variable and the factors were equated with few college quarters completed and strong agreement with the factors or reasons for leaving I.S.U. More specifically, students who had completed fewer college

quarters were inclined to report social inadequacy as a reason for college withdrawal, while students who had completed more college quarters were inclined not to report that reason (Factor 1). Lack of commitment to a college degree tended to be cited as a reason for withdrawal by students who had completed fewer college quarters and tended not to be cited as a reason by students who had completed more college quarters (Factor 22). Dropouts who had completed fewer college quarters tended to reply that they had not been ready for college and needed time to grow up, while dropouts who had completed more college quarters tended to reply in the opposite manner (Factor 25). The fewer the college quarters the students had completed, the more likely they tended to respond that they withdrew from Iowa State University to be closer to home; the contrary was true for students who had completed more college quarters (Factor 28).

Discussion of Findings

Sampling method and sample

Interpretation of the findings of this study must be done with care because of the sampling procedure used and the percentage of questionnaires returned. Nearly 60 percent of the parents of students in the population supplied current addresses of their children who had attended and later withdrawn from college. Then, 65 percent of these dropouts completed and returned questionnaires. Thus, sampling bias may be present in this study. The literature reviewed also pointed out that the more successful the dropouts have been prior to and following withdrawal, the more likely they are to respond in comparison to the less successful dropouts.

Reasons for attrition and student variables

The first hypothesis tested in this study was that there was no significant difference between students enrolled during 1951-1959 (Group I) and those enrolled during 1960-1972 (Group II) regarding reasons for college withdrawal and the student variables. The hypothesis was rejected on 34 of the 84 reasons for withdrawal (Table 22) and rejected on 13 of 32 factors (Table 27). The hypothesis was accepted for these seven student variables: educational level and occupation of the mother, high school rank, age at college entrance, marital status, educational goal, and employment following withdrawal. The hypothesis was rejected for these ten student variables: educational level and occupation of the father, finance of college expenses, student employment, cumulative grade point average, college major, college quarters completed, college residence, assistance from university personnel needed, and degree completion following withdrawal.

Even though differences between students in Group I and in Group II regarding the reasons for withdrawal and student variables proved to be statistically significant, the practical interpretation of these differences was that the two groups were in fact quite similar. The significant differences between the two groups that did occur probably resulted from the large sample size of the study. As samples increase in size, less difference is needed between variables to reach statistical significance.

Although the differences between groups were not great, mention will be made of changes in importance of reasons and reasons with the greatest differences between groups. None of the factors and only three of the 34 reasons that differed significantly between Group I and Group II became

less important reasons for withdrawal: interest in a major other than in home economics, inadequate high school preparation, and opportunity to transfer to a more preferred college. The decrease in importance of the first and third items was likely due to the availability of elementary education certification at I.S.U. starting in 1963. A downward trend in importance of inadequate high school preparation as a reason for withdrawal was noted for students who entered college during 1960-1972. This may have been an outcome of the emphasis placed on mathematics and the sciences in elementary and secondary schools during the 1950's.

Administrators, counselors, and teachers might pay particular attention to those 31 specific reasons and 13 factors on which a shift in response toward more agreement was observed for Group II than for Group I. These reasons for attrition apparently were more important to students in Group II than those in Group I. Therefore, to reverse this trend in student response patterns, appropriate action should be taken by the institution.

Most important reasons for withdrawal

Three approaches to the identification of the most important reasons for withdrawal were used: the ranking of individual reasons according to student agreement, student ranking of the first, second, and third most important reasons, and the ranking of factors according to student agreement. Marriage was by far the single most important reason for withdrawal as cited by the students themselves. Approximately one-fourth of the respondents stated it as their first most important reason, while about

45 percent of them expressed agreement on the rating scale that marriage plans had influenced their decision to withdraw from college.

Among the five most important factors were marriage, uncertainty of college major, and dissatisfaction with program of study which seemed to agree with the individually ranked first, second, and third most important reasons for attrition. Lack of staff support and university too large emerged among the top five factors in importance rather than pregnancy, deficient finances, and academic difficulties which were ranked by the students as the first, second, and third important reasons. However, neither of the rankings of academic difficulties on the most important factors or reasons for attrition seemed to reflect that 30 percent of the students had cumulative GPA's below the necessary 2.00 required for graduation. These discrepancies might be attributed to dropouts reporting more socially acceptable reasons for withdrawal or to a difference between concerns that they had during college but that really were not great enough to trigger their withdrawal from college. Consequently, a comparison of the agreement or disagreement on such problems or concerns of dropouts with those of graduates would help clarify factors that were truly related to persistence and attrition.

Relationship of reasons for withdrawal to student variables

The second hypothesis tested was that there was no significant difference between the reasons for withdrawal and the student variables. The hypothesis was accepted on the variables: (1) education of mother, (2) occupation of mother, (3) age at college entrance, and (4) educational goal. The hypothesis was rejected on variables: (1) education of father,

(2) occupation of father, (3) high school rank, (4) year of college entry, (5) student employment, (6) cumulative grade point average, and (7) college quarters completed.

Students who were employed full or part time and had father with less education and lower occupational status tended to withdraw because of financial difficulties. Therefore, the financial aids office and faculty should keep alert to such students and assist them if possible in finding solutions to their financial difficulties.

Because lower high school ranks of students were associated with academic problems that led to withdrawal, university officials might re-examine admissions criteria. Academic advisers and counselors should assist students with low HSR's in planning programs of study that will provide them with the greatest chances for success. Provision of remedial courses and adequate tutorial services for these students likely would be necessary.

Although students with lower cumulative GPA's also tended to report reasons related to academic difficulties, lower GPA's cannot always be equated with lower aptitude. These additional reasons were related to lower cumulative GPA's: lack of academic challenge, uncertainty of college major, bigness of the university, and dissatisfaction with program of study. Therefore, advisers and counselors must make special effort in helping students match their abilities and interests with appropriate programs of study. In addition, the university could counteract its "bigness" by offering alternatives to large group activities that would provide opportunities for "small college atmosphere" within this large university. Students with higher cumulative GPA's as well as those with higher HSR's

tended to report marriage as the reason for their withdrawal. These students with greater chances for academic success should be encouraged to consider how marriage will affect their chances of college graduation and alternatives they have in achieving their educational goal. The university might also investigate ways of better meeting the needs of married students.

Because early withdrawal from college appeared to be related to feelings of social inadequacy, lack of commitment to a college degree, immaturity, and desire to be closer to home, perhaps high school counselors could encourage students with such characteristics to enroll in other post-secondary educational programs offering them greater chances of completion. Early identification of these students at college followed by their involvement in a group counseling situation might be one approach in alleviating withdrawal of these students.

Students entering college in the 1960's and 1970's tended to report scheduling problems, lack of job information and opportunities, defense of their beliefs and values, unsatisfactory environment, and marriage as reasons for withdrawal. These reasons seem to be a reflection of the larger enrollments of students in college, the tightening of the job market for college graduates, the student movements of the 1960's, and the lowering of the average age at marriage. University personnel should investigate and respond to these increasing concerns of students which have influenced their decision to withdraw from college.

SUMMARY AND RECOMMENDATIONS

Summary

The main purpose of this study was to determine the most important reasons for student withdrawal from the College of Home Economics at Iowa State University during 1951-1972 and provide a description of background variables of these students. In examining who was dropping out and why, student background variables and reasons for withdrawal were compared between Group I (1951-1959) and Group II (1960-1972) to determine changes in the student groups themselves and in their reasons for attrition. Certain student background variables were correlated with the reasons to explore relationships that might give further insight into the attrition problem.

The population included former Iowa resident students who had entered the College of Home Economics at I.S.U. during 1951-1972 as first quarter freshmen and left the university within the first or succeeding quarters before receiving their baccalaureate degrees. A total of 1732 questionnaires were mailed to all of these students for whom current mailing addresses had been obtained. Returned, usable questionnaires numbered 1099 for the total group and represented nearly a 65 percent return (Group I, n = 362 and Group II, n = 737). In addition to the questionnaire, facts were collected from student records in the registrar's office.

Analysis of the data included: (1) a score analysis with the frequency distribution, means, variance, and standard deviation of the student background variables, 84 reasons for dropping out of home economics, and first, second, and third most important reasons of the total sample, (2) an

exploratory factor analysis of the 84 reasons using the Little Jiffy, Mark IV (Kaiser, 1970) statistical procedure, (3) a score analysis of the student background variables and the factors for Group I, 1951-1959 and Group II, 1960-1972, (4) a t test to determine significant differences between Group I and Group II, and (5) a correlation between certain background variables and the factors for the total sample which combined Group I and Group II.

Descriptions of students according to the following background variables were reported. Those that were significantly different between the two groups as a result of t test comparisons are noted with asterisks.

educational level of mother
educational level of father*
occupation of mother
occupation of father*
high school rank
age at college entrance
marital status
educational goal
finance of college expenses*
student employment*
cumulative grade point average*
college major*
college quarters completed*
college residence*
assistance from university personnel needed before withdrawal*
employment following withdrawal from I.S.U.
re-enrollment at I.S.U.
degree completion following withdrawal*
major of degree completed

Even though some variables were significantly different, after further examination the researcher concluded that the two groups of students were not, in reality, outstandingly diverse.

Among the reasons for leaving I.S.U. ranked as first, second, and third in importance by the students in Group I and Group II marriage was cited by about 25 percent of the dropouts and was by far the first most important reason for attrition. Marriage also ranked high among the second

and third most important reasons. Other reasons among the three most important ones frequently reported by both groups were desire to go with husband, financial difficulties, and uncertainty of college major. Students in Group I ranked interest in a nonhome economics major, lack of assistance from adviser, lack of concern about receiving a degree, desire to work, and inadequate high school preparation higher than did students in Group II. On the other hand, students in Group II ranked these reasons more important than did Group I: pregnancy, too many science courses, desire to be closer to boyfriend (girlfriend), academic difficulties, and need to define personal goals. However, these differences in first, second, and third most important reasons for leaving I.S.U. were not significantly different between the two groups of students.

Because several reasons for college withdrawal might be associated with a basic underlying reason or concept, factor analysis was employed to reduce the number of specific reasons. This procedure was used to increase the precision of determining importance of basic reasons for attrition and reduce the complexity of correlating selected student background variables with reasons for withdrawal. Through factor analysis the 84 reasons for withdrawal from college were reduced to 15 multiple item factors and 17 single item factors.

Results of the t test revealed that Group I and Group II were significantly different on 13 factors which identified basic reasons for withdrawal from the College of Home Economics at I.S.U. These factors were: (1) scheduling problems, (2) financial difficulties, (3) dissatisfaction with the program of study, (4) university too large, (5) coursework difficult and demanding, (6) lack of job information and opportunities,

(7) self-actualization, (8) lack of a quiet residential study area, (9) pregnancy, (10) incompatible beliefs and values, (11) dissatisfaction with the local environment, (12) lack of commitment to college degree, and (13) marriage. On each of these significantly different factors, the factor mean score for Group II was lower than for Group I indicating more importance given to the factor as a reason for withdrawal from college.

After further examination and interpretation of the significant differences, the researcher concluded that the differences were not so great as to warrant separate treatment in determining importance of the factors. Therefore, the five most important factors or reasons for withdrawal for the group as a whole were:

(1) Factor 23: Marriage
(2) Factor 24: Uncertainty of college major
(3) Factor 2: Lack of staff support
(4) Factor 8: University too large
(5) Factor 7: Dissatisfaction with program of study

For insight into the relationship of who was dropping out of the College of Home Economics at I.S.U. and why, 11 student background variables were correlated with 32 factors. Correlations of .120 or above were interpreted as significant, indicating a definite relationship even though it was slight. The four background variables of education of mother, occupation of mother, age at college entrance, and educational goal did not correlate with any factors at .120 or higher. Student background variables which correlated with various factors at .120 or above included: (1) education of father, (2) occupation of father, (3) high school rank, (4) year of college entry, (5) student employment, (6) cumulative grade point average, and (7) college quarters completed. A summary of the relationships between these background variables and the factors follows:

(1) Students with fathers having less education tended to attribute financial difficulties as one of their reasons for withdrawal, while students with fathers having more education did not.

(2) Students whose fathers held unskilled, semi-skilled, or skilled occupational positions tended to list financial difficulties as reasons for withdrawal, while students whose fathers held professional and managerial positions did not.

(3) Students with lower high school ranks tended to report more frequently than did students with higher ranks academic difficulties, difficult and demanding coursework, poor study habits and inadequate high school preparation, and immaturity, while students with higher high school ranks tended to report marriage as their reason for withdrawal.

(4) Students entering college in the 1960's and 1970's tended to report scheduling problems, lack of job information and job opportunities, constant defense of their beliefs and values, dissatisfaction with the local environment, and marriage as contributing factors in their decision to withdraw.

(5) Students who were employed full or part time tended to report financial difficulties as influencing their decision to drop out of I.S.U.

(6) Students with lower cumulative grade point averages tended to list lack of staff support, academic difficulties, lack of academic challenge, dissatisfaction with program of study, the large university size, difficult and demanding coursework, poor study

habits and secondary academic preparation, lack of a quiet residential study area, adviser's recommendation to leave college, uncertainty of college major, and immaturity as reasons that influenced their decision to withdraw, while students with higher cumulative grade point averages tended to cite marriage as their reason for withdrawal.

(7) Students who had completed fewer college quarters were inclined to report they withdrew from college because of social inadequacy, lack of commitment to a college degree, immaturity, and desire to be closer to home, while students who had completed more college quarters tended not to report such reasons for withdrawal.

Recommendations

On the basis of the current research findings concerning the reasons for withdrawal from the College of Home Economics at I.S.U., the following recommendations are offered to administrators, academic departments, and student services.

Academic departments

1. Promote greater faculty concern and interest in students to reduce student feelings of lack of staff support.
2. Continually evaluate curricula including requirements, electives, quantity and difficulty of material presented in courses, and adequacy of career preparation of graduates in efforts to provide maximum student satisfaction with their programs of study.

3. Experiment with alternatives to large group instruction to provide students with opportunities for "small college atmosphere" within this large university.
4. Relate courses to job orientations to give students a better understanding of why courses are needed for their career preparation.

Academic advising and counseling

1. Give students adequate assistance in planning their programs of study to communicate faculty interest in them and to encourage their maximum growth and satisfaction in college.
2. Help students with vocational curriculum choices.
   a. Assist them in identifying and building on their past experiences, interests, aptitudes, special skills, etc., to increase discovery of self and commitment to their educational goals.
   b. Allow students to explore other curricula to increase commitment to and satisfaction with program of study.
3. Emphasize importance of job experiences related to college major in evaluating career choice and relating coursework to job tasks performed.
4. Provide opportunities for students to develop good study skills and to acquire remedial or tutorial assistance with coursework especially in areas of physical sciences and mathematics.
5. Counsel with students in examining how marriage and its subsequent responsibilities will affect completion of their education and to

consider possible alternatives in achieving their educational goals.

6. Identify the less mature students and provide opportunities for group counseling to help prevent their withdrawal.

Articulation with high schools and post-secondary institutions

1. Communicate with counselors and prospective students concerning the requirements of the college degree programs and necessary academic preparation for them.
2. Encourage students to establish good study habits prior to college entry.
3. Encourage career exploration by students before matriculation to increase their chances for satisfactory completion of their college program.

Student activities

1. Promote student-faculty interaction to increase the feelings of concern between the two.
2. Encourage small group activities to reduce feelings of "bigness" in this large university setting.

Residences

1. Encourage good study practices and provide quiet study areas.
2. Promote improved reactions between Greek and dormitory residences.
3. Investigate alternative living/eating arrangements in the residences to increase student satisfaction with them.

Financial aid

1. Be alert to students who have fathers with less education and lower status occupations and students who are employed full or part time since they have a greater tendency to withdraw for financial reasons.

Placement

1. Assist students in securing work experiences early to learn about job opportunities, evaluate their vocational choice, and see the relationship between courses and job responsibilities.

Admissions

1. Re-examine admissions criteria since students with lower HSR's tend to withdraw for academic reasons.
2. Initiate a computerized system of record keeping conducive to future on-going analysis of student flow in college.

Student scheduling

1. Investigate possible solutions to minimize student scheduling problems involving course and time offerings.

Recommendations for further research

1. Revise the questionnaire by using the 32 factors instead of the 84 reasons for withdrawal. Reverse the rating scale using "1" to indicate "not a problem" and "9" to indicate "a very important problem." Rather than having students rate reasons for leaving I.S.U., have students rate problems they may have encountered

during their college enrollment in terms of the degree of concern or importance of the problem.

2. Explore the relationship of other student variables with reasons for withdrawal.
3. Administer the revised questionnaire to students who have graduated and compare graduates and nongraduates including first quarter freshmen and transfer students on student background variables and concerns during college.
4. Conduct a longitudinal study of an entering class to examine attrition rates using further classifications of types of withdrawal, problems or concerns experienced as students, and the interaction of student-college variables resulting in graduation or withdrawal.
5. Develop a predictive instrument to identify the dropout prone students.

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APPENDIX A: QUESTIONNAIRE

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY
Ames, Iowa 50010

COLLEGE OF HOME ECONOMICS
OFFICE OF THE DEAN

October 1974

Dear Former Student,

The College of Home Economics is concerned that each student has the best experience possible while attending Iowa State University. In order to improve the academic program and student life, your assistance is needed. As a former student, the reasons which influenced your decision to leave Iowa State University will enable us to evaluate and improve the program and, thus, more effectively assist future students.

Your responses to the attached questionnaire will be confidential; your name will not be used. The study will be summarized as a whole, not by individuals.

Thank you for your time and prompt response. If we can be of further service to you, please feel free to contact us.

Sincerely,

Helen LeB. Hilton

Helen LeB. Hilton, Dean
College of Home Economics

HLH:dm
Att.

P.S. 1) This questionnaire will require only twenty minutes of your time.
2) Return the completed questionnaire by folding it in half, stapling or taping it together, and mailing it within the next ten days.

Part I: General Background

Directions: Complete each statement by placing an "X" in front of the most appropriate response or writing a short answer in the space provided. Please respond to every item.

Name: _____

Last First Middle Maiden Name

1. My age during the first quarter of enrollment at ISU was
   _____1) 17 years old or younger
   _____2) 18 years old
   _____3) 19 years old
   _____4) 20 years old
   _____5) 21 years old or older

2. When I enrolled at ISU, my educational goal was to complete
   _____1) 1 year of college or less
   _____2) 2 years of college
   _____3) 3 years of college
   _____4) 4 years of college
   _____5) other, specify_____

3. While I was a student, I was
   _____1) employed full-time (more than 20 hours)
   _____2) employed 10-20 hours
   _____3) employed less than 10 hours
   _____4) not employed

4. My mother's highest educational level is:
   _____1) 8th grade or less
   _____2) 12th grade or less
   _____3) business, vocational, or technical training after completion of high school
   _____4) 1 or more years of college without receiving a degree
   _____5) Bachelor's degree
   _____6) Advanced degree

5. Her occupation while I was a student was _____.
   Specific duties: _____

6. My father's highest educational level is:
   _____1) 8th grade or less
   _____2) 12th grade or less
   _____3) business, vocational, or technical training after completion of high school
   _____4) 1 or more years of college without receiving a degree
   _____5) Bachelor's degree
   _____6) Advanced degree

7. His occupation while I was a student was _____.
   Specific duties: _____

8. My college expenses were primarily financed by
   _____1) my parents
   _____2) student loans and/or scholarships
   _____3) myself
   _____4) my spouse
   _____5) other, specify_____

9. My major at the time I left ISU was
   _____1) Applied Art
   _____2) Child Development
   _____3) Food and Nutrition
   _____4) Home Economics Education
   _____5) Home Economics for General Education
   _____6) Home Economics Journalism
   _____7) Household Equipment or Family Environment
   _____8) Institution Management
   _____9) Physical Education for Women
   ____10) Textiles and Clothing
   ____11) not declared

10. My major place of residence while attending ISU was my
   _____1) dormitory
   _____2) sorority or fraternity
   _____3) off-campus housing
   _____4) married student housing
   _____5) parent's home
   _____6) other, specify_____

11. When I left ISU, I was
   _____1) single
   _____2) engaged to be married
   _____3) married
   _____4) separated
   _____5) divorced
   _____6) widowed

12. Before I left ISU, I had completed
   _____1) 2 quarters or less
   _____2) 3-5 quarters
   _____3) 6-8 quarters
   _____4) 9 or more quarters

13. After leaving ISU I
   _____1) went to work full or part-time
   _____2) got married and became a homemaker
   _____3) enrolled at a business, vocational, or technical school
   _____4) transferred to an area community or junior college
   _____5) transferred to another four-year university or college
   _____6) other, specify_____

14. After withdrawing from ISU I
   _____1) re-enrolled only once
   _____2) re-enrolled twice
   _____3) re-enrolled three or more times
   _____4) did not re-enroll

15. Since leaving ISU I

_____1) have completed my Certificate or Associate degree: major_____

_____2) have completed my Bachelor's degree: major_____

_____3) have completed my Master's degree: major_____

_____4) am still in school and working toward my degree: major_____

_____5) have not completed a degree

16. Was there anything the university (teachers, advisers, counselors) could have done to help you before you left ISU?_____

_____

Part II: Reasons for Leaving ISU

Directions: Now you have the opportunity to express your concerns which led to your decision to withdraw from ISU. If you Strongly Agree with the reason, write "1" in the blank. If you Strongly Disagree with the reason, write "9" in the blank. If you are Uncertain or the reason is Not Applicable in your situation, write "5" in the blank. You may use any number between "1" to "9" to indicate the extent of your agreement and disagreement. The scale is shown below. Remember to respond to every item.

1	2	3	4	5	6	7	8	9
Strongly Agree		Agree		Uncertain Not Applicable		Disagree		Strongly Disagree

I left ISU because:

_____ 1. I was dropped or about to be dropped from enrollment by the academic standards committee.

_____ 2. I wanted a slower life style.

_____ 3. I would have been on temporary enrollment if I had continued.

_____ 4. I was disappointed in my housing arrangement.

_____ 5. I was not sure about my college major.

_____ 6. I was not ready for college; I needed time to grow up.

_____ 7. I became interested in a major other than in home economics.

_____ 8. I did not feel accepted by the other students.

_____ 9. I was not concerned about receiving a college degree.

_____10. I thought the dormitory and Greek systems had non-progressive living arrangements (hours, co-ed housing, etc.).

_____11. I found the curriculum in my major inadequate for my career preparation.

_____12. I could not easily get public transportation from the university to different areas in Ames.

1	2	3	4	5	6	7	8	9
Strongly Agree		Agree		Uncertain Not Applicable		Disagree		Strongly Disagree

I left ISU because:

_____13. I did not have freedom to explore other curricula so I could easily evaluate my interests and abilities.

_____14. I had a family problem at home (conflict, illness, or death).

_____15. I did not like taking courses I did not need.

_____16. I was pregnant.

_____17. I felt too much emphasis was placed on science courses which did not relate directly to my major.

_____18. I felt the city of Ames was too small.

_____19. I felt too much emphasis was placed on home economics courses which did not relate directly to my major.

_____20. I wanted to go with my husband.

_____21. I felt too much pressure due to the quarter system of class schedules.

_____22. I had health complications (physical illness, injury, mental disturbance).

_____23. I felt inferior because of the academic competition.

_____24. I had no time left after studying to do anything else.

_____25. I felt grades were emphasized rather than what one had learned.

_____26. I did not like being treated like a number.

_____27. I was not motivated to study.

_____28. I found ISU too large to get acquainted with other students.

_____29. I could not get into my required and/or elective courses because of their full enrollment.

_____30. I wanted to decide what I wanted to do.

_____31. I could not fit my required and/or elective courses into my schedule at the times they were offered.

_____32. I did not like the relationship between the Greek residences and dormitories.

_____33. I found the classes too large.

_____34. I was constantly defending my beliefs and values.

_____35. I felt a lack of faculty interest in me.

_____36. I felt socially inadequate.

_____37. I thought the quality of instruction was poor.

_____38. I was overburdened by my employment.

_____39. I did not receive encouragement from my teachers.

_____40. I was tired of school.

1	2	3	4	5	6	7	8	9
Strongly Agree		Agree		Uncertain Not Applicable		Disagree		Strongly Disagree

I left ISU because:

_____41. I did not receive enough assistance from my academic adviser.

_____42. I wanted to travel.

_____43. I did not like my academic adviser.

_____44. I wanted to work.

_____45. I did not like going to school.

_____46. I wanted to find out who I was.

_____47. I did not know how to study.

_____48. I wanted to be closer to home.

_____49. I had inadequate high school preparation for college work.

_____50. I felt isolated because of my older age.

_____51. I needed remedial courses (e.g. math, chemistry) that were not offered.

_____52. I did not like the type of people who attend ISU.

_____53. I got a chance to transfer to my more preferred college choice.

_____54. I found the means of transportation from my hometown to the university very limited.

_____55. I did not find the coursework intellectually stimulating.

_____56. I planned to get married.

_____57. I did not find the coursework challenging.

_____58. I felt the city of Ames was too large.

_____59. I could not get on-the-job training.

_____60. I could not get along with my roommate.

_____61. I learned that job opportunities were not present for graduates in my major.

_____62. I became overly anxious and/or worried.

_____63. I could not get much information about jobs available in different majors.

_____64. I could not find a quiet place to study at my residence.

_____65. I did not have enough information concerning ISU's academic requirements in my major before enrolling.

_____66. I was married and one of us had to quit for financial reasons.

_____67. I did not know what the job in my major field was like in order to see why some courses were worthwhile.

_____68. I was refused a student loan because my parents' income was too high.

_____69. I felt the courses were too hard.

118

1	2	3	4	5	6	7	8	9
Strongly Agree		Agree		Uncertain Not Applicable		Disagree		Strongly Disagree

I left ISU because:

_____70. I was disappointed in not having elective courses until my junior and/or senior year(s).

_____71. I was experiencing financial difficulties.

_____72. I did not have enough electives.

_____73. I was not pledged by the sorority (fraternity) of my choice.

_____74. I could not afford the expensive supplies and materials for my courses.

_____75. I wanted to be closer to my boyfriend or girlfriend.

_____76. I had no opportunity for practical experience in my major prior to my senior year.

_____77. I felt you should be able to live in a dormitory without having to eat there.

_____78. I was not satisfied with the variety of courses offered in my major.

_____79. I thought the courses were too detailed.

_____80. I could not make close friends.

_____81. I felt too much material was presented in too short a time in the courses.

_____82. I lacked responsibility and independence.

_____83. I really did not want to come to ISU in the first place, but my parents insisted.

_____84. I was advised to leave by my adviser or counselor.

85. of other reasons; please specify_____

_____

_____

86. From the reasons stated above, select three reasons which most influenced your decision to leave Iowa State University. List these reasons in order of importance by writing the number corresponding to the most important reason first.

_____1) First most important reason

_____2) Second most important reason

_____3) Third most important reason

(fold on line)

Dean Helen LeB. Hilton
College of Home Economics
Iowa State University
Ames, Iowa 50010

staple
or tape

APPENDIX B: CODING SCHEME

Questionnaire

Part I

The coding schemes followed option numbers on the questionnaire for the following items: 1, 3, 4, 6, 9, 11, 12, and 14. The coding schemes for the remaining questionnaire items in Part I are given as follows:

2. Options 1-4 (same as given on questionnaire)
   5) No goal
   6) Uncertain
   7) More than 4 years of college

5 and 7. Options 1-9 represented the categories as given in the Dictionary of Occupational Titles (1965) except that categories "0" and "1," the professional and managerial occupations, were combined and coded as "1."

8. Options 1-4 (same as given on questionnaire)
   5) Options 1 & 2 checked, my parents (or other relative) and student loans. Any 3 options checked.
   6) Options 2 & 3 checked, student loans and/or scholarships and myself (or spouse or bank loans).
   7) Options 1 & 3 checked, parents and myself.

10. Options 1-5 (same as given on questionnaire)
   2) Options 1 & 2 checked, dormitory and sorority
   3) Options 1 & 3 checked, dormitory and off-campus housing
      Options 5 & 3 checked, parent's home and off-campus housing
   4) Options 1 & 4 checked, dormitory and married student housing

13. Options 1-5 (same as given on questionnaire)
   3) Options 2 & 3 checked, got married . . . and enrolled at a business . . . school
   4) Options 2 & 4 checked, got married . . . and transferred to community college
   5) Options 2 & 5 checked, got married . . . and transferred to another college
   6) Options 1 & 5 checked, went to work and got married
   7) Options 1 & 5 checked, went to work and transferred to another college
      Options 1, 2, & 5 checked, went to work, got married, and transferred to another college
   8) Options 1 & 3 checked, went to work and enrolled at a business . . . school
      Options 1 & 4 checked, went to work and transferred to community college
      Options 1, 2, & 3 checked, went to work, got married, and enrolled at a business . . . school
   9) Other: had a baby, entered service, followed husband, did nothing

15. Options 1-5 (same as given on questionnaire and if more than one degree had been completed, the highest degree was recorded)
    6) Options 1 & 4 checked, certificate and working on degree
    7) Options 2 & 4 baccalaureate and working on degree
       Options 3 & 4, master's and working on degree

15a. Categories for majors completed
    1) Accounting, clerical, bookkeeping
    2) Business administration
    3) Secretarial
    4) Home economics
    5) Science and humanities
    6) Education
    7) Health occupations

16. 1) No and not sure
    2) Yes (but no written comment)
    3) Yes, financial help -- scholarships, loan advice
    4) Yes, more personal attention, good personal relationships, encouragement
    5) Yes, major & career guidance, degree requirements
    6) Yes, better counseling, more guidance, knowledgeable advisers, advice on course selection, information about how to study courses, remedial courses, tutors, scheduling, and dropping and adding courses
    7) Yes, curriculum, instruction, grading, etc. (adaptable programs, innovative teaching methods, testing out, reduce science requirements and/or relate them to home economics, smaller classes, remedial classes)
    8) Yes, miscellaneous (housing, health service, roommates)
    9) Yes, more than one of the above

Part II

Items 1-84 were coded "1" to "9" according to the response scale as given on questionnaire and item 86 (parts 1, 2, & 3) was coded "1" to "84" as presented in the questionnaire in Part II and "85" to "99" as presented in the coding scheme for questionnaire item 85 as follows:

85) I wanted an education degree (elementary, physical, special).
86) I wanted a health occupations major (nursing, pharmacy, physical therapy).
87) I wanted a major that I.S.U. did not offer (other than a major listed in "85" such as music, voice, radio journalism).
88) I decided I wanted a fine arts or liberal arts education.

89) I wanted to finish some type of post-high school training or education in less than four years with less formal instruction and more on-the-job experience (cosmetology, business school, secretarial training).
90) I was having trouble passing the mathematics, chemistry, physics, English, and foreign language classes.
91) I was married and found my family responsibilities and school too much.
92) I needed to improve my grade point average; my grade point average was too low to get a degree in education; I was dissatisfied with myself in getting some low grades.
93) I wanted a change in locality and/or climate.
94) I was able to transfer my credits to another college or university (lower tuition, commuting distance, more job opportunities in area).
95) I made a poor adjustment to college (studies, social aspects).
96) I felt overburdened with contact hours and Saturday classes and no time left for extra reading or thought.
97) I felt I was wasting time and money for what I was getting out of the curriculum; I saw no real use for completing the degree.
98) I joined the armed services, Peace Corps; my husband was drafted.
99) Miscellaneous reasons (wanted to move on to other aspects of life, for study, had boyfriend trauma or broken engagement, saw no flexibility or cooperation between college, left because of religious convictions).

APPENDIX C: CORRESPONDENCE

Double Postcard to Parents of Sample

Dear Parents:

The College of Home Economics at Iowa State University is trying to update the addresses of former students. It would be appreciated if you would return the self-addressed postcard listing the present address and complete name of _____.

Thank you for your participation and time.

Helen LeB. Hilton
Dean, College of Home Economics

Name:_____
(last) (first) (middle initial) (maiden)

Spouse's name:_____
(first) (middle initial)

Street address:_____

City:_____

State:_____

Zip Code:_____

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY
Ames, Iowa 50010

COLLEGE OF HOME ECONOMICS
OFFICE OF THE DEAN

October 24, 1974

Follow-up Letter to Sample

Dear Former Student,

Recently you received a questionnaire giving you an opportunity to express your reasons for leaving the College of Home Economics at Iowa State University. Your responses to the questionnaire are important to us in evaluating and improving the program to benefit our students. Hopefully, this reminder will emphasize our desire to hear from you soon.

If you already have completed and mailed the questionnaire, please disregard this letter. However, if you need a questionnaire, simply return this letter with a note stating the request and a stamped questionnaire will be returned to you.

Thank you again for your time and cooperation in this effort.

Sincerely yours,

Helen LeB. Hilton, Dean
College of Home Economics

LM:dm

APPENDIX D: TABLES

Table 21. Means[a] and t values for the background variables and reasons for withdrawal of the students in Group I and Group II

Background variables	Mean		t value
	Group I	Group II	
High school rank	24.47	25.40	.79
Cumulative grade point average	22.05	22.80	2.04*
Age at college entrance	1.96	1.98	.50
Educational goal	3.86	3.93	1.40
Student employment	3.61	3.44	3.07**
Finance of college expenses	1.71	2.05	3.05**
Educational level of mother	2.99	3.04	.60
Educational level of father	2.75	2.96	2.11*
Occupation of mother	2.68	2.63	.88
Occupation of father	2.92	3.24	2.39*
College major	5.84	4.46	6.07**
College residence	1.40	1.56	2.35*
Marital status	1.54	1.60	1.33
College quarters completed	2.44	2.33	2.00*
Activity following withdrawal from I.S.U.	3.56	3.47	.63
Re-enrollment at I.S.U.	3.58	3.52	.88
Degree completion following withdrawal	3.79	4.11	3.52**
Major of degree completed after leaving I.S.U.	5.06	4.92	1.03
Assistance from university personnel needed before withdrawal	2.04	2.36	2.06*
Other reasons for withdrawal	89.24	85.09	1.73
First most important reason for withdrawal	42.46	41.56	.52
Second most important reason for withdrawal	39.15	37.65	.85
Third most important reason for withdrawal	41.69	40.39	.68

[a]See coding plan in Appendix B for explanation of scores.

*$p < .05$ level of confidence.

**$p < .01$ level of confidence.

Table 22. Means, t values, and percentages for Group I and Group II for reasons for withdrawal

Item number	Mean[a]		t value	Percent agreeing	
	Group I	Group II		Group I	Group II
1	6.97	7.17	1.32	8	8
2	7.15	7.13	.14	8	12
3	6.89	7.04	.91	8	8
4	7.38	7.05	2.18*	8	14
5	5.37	5.45	.42	38	40
6	6.67	6.80	.79	20	17
7	5.71	6.49	4.24**	32	23
8	7.73	7.70	.25	5	5
9	6.39	6.48	.53	25	23
10	7.06	6.68	2.54*	8	15
11	6.49	6.20	1.79	14	23
12	7.01	6.75	1.90	5	10
13	6.02	6.00	.12	27	26
14	6.94	6.78	.99	11	15
15	5.35	4.52	4.63**	39	53
16	7.42	6.86	3.45**	6	10
17	5.06	4.38	3.70**	45	56
18	7.81	7.78	.27	1	2
19	6.25	6.17	.48	24	24
20	5.32	4.77	2.99**	23	33
21	6.96	6.49	3.13**	21	23
22	7.01	6.80	1.38	8	12
23	6.47	6.49	.12	22	24
24	6.75	6.45	2.03*	15	22
25	5.69	4.95	4.39**	34	48
26	5.83	5.35	2.76**	29	37
27	6.41	5.79	3.75**	21	33
28	6.86	6.74	.81	15	19
29	7.16	6.36	5.66**	5	19
30	5.33	4.93	2.34*	32	44
31	7.04	6.29	5.51**	4	19
32	6.43	5.86	3.68**	17	25
33	5.94	5.51	2.63**	31	39
34	7.28	6.84	3.58**	4	9

[a]Means indicated on a 9-point scale: "1," strongly agree and "9," strongly disagree.

*Indicates significance beyond the .05 level of confidence.

**Indicates significance beyond the .01 level of confidence.

Table 22. (continued)

Item number	Mean[a] Group I	Mean[a] Group II	t value	Percent agreeing Group I	Percent agreeing Group II
35	5.21	5.03	1.03	40	47
36	6.79	6.92	.91	16	13
37	7.07	6.97	.76	12	13
38	6.78	6.60	1.32	2	7
39	5.56	5.41	.91	35	41
40	6.56	5.91	4.02**	20	30
41	5.32	5.30	.11	36	39
42	6.82	6.37	3.09**	7	15
43	6.70	6.40	1.97*	10	18
44	6.43	6.23	1.27	18	21
45	7.08	6.65	2.97**	9	18
46	6.43	5.91	3.34**	16	27
47	6.14	5.94	1.17	27	32
48	7.20	6.97	1.54	8	14
49	5.96	6.45	2.83**	32	25
50	7.11	6.93	1.44	below 1	1
51	6.19	6.48	1.76	23	17
52	7.87	7.72	1.35	2	3
53	6.10	6.45	2.29*	16	10
54	6.89	6.86	.20	10	11
55	7.00	6.96	.29	12	15
56	4.51	4.23	1.42	42	48
57	7.24	7.28	.32	7	8
58	7.80	7.78	.19	0	1
59	6.67	6.51	1.22	4	8
60	7.44	7.19	1.86	6	10
61	7.16	6.61	3.92**	5	13
62	6.39	5.80	3.51**	21	31
63	6.75	6.43	2.35*	8	13
64	6.96	6.53	2.88**	14	21
65	6.65	6.61	.26	17	17
66	6.38	6.23	1.02	7	9
67	6.19	6.00	1.23	18	24
68	6.60	6.46	.97	5	9
69	6.25	6.17	.52	24	27
70	5.43	5.30	.78	36	38
71	6.23	5.95	1.63	21	26
72	6.06	5.90	1.04	23	28
73	7.10	7.10	0	5	1
74	7.01	6.62	2.76**	11	16
75	6.06	5.25	4.50**	20	33
76	6.05	5.85	1.32	14	19
77	6.93	6.26	4.56**	8	16

Table 22. (continued)

Item number	Mean[a]		t value	Percent agreeing	
	Group I	Group II		Group I	Group II
78	6.60	6.40	1.36	13	19
79	6.63	6.58	.36	15	16
80	7.60	7.33	2.16*	4	9
81	6.20	5.48	4.40**	26	40
82	6.62	6.67	.32	18	18
83	7.28	7.29	.07	11	10
84	7.53	7.51	.15	4	6

Table 23. Rank order and percentage[a] of the first most important reason for leaving I.S.U. as given by the students in Group I and Group II

Group	Item no.	First most important reason	Rank	Percent
Group I	56	I planned to get married.	1	26
	7	I became interested in a major other than home economics.	2	9
	71	I was experiencing financial difficulties.	3	8
	20	I wanted to go with my husband.	4	6
	1	I was dropped or about to be dropped from enrollment by the academic standards committee.	5	3
	5	I was not sure about my college major.	5	3
	16	I was pregnant.	5	3
	22	I had health complications.	5	3
	75	I wanted to be closer to my boyfriend or girlfriend.	5	3
Group II	56	I planned to get married.	1	23
	20	I wanted to go with my husband.	2	8
	75	I wanted to be closer to my boyfriend or girlfriend.	2	8
	16	I was pregnant.	3	5
	71	I was experiencing financial difficulties.	3	5
	1	I was dropped or about to be dropped from enrollment by the academic standards committee.	4	4
	5	I was not sure about my college major.	5	3
	17	I felt too much emphasis was placed on science courses which did not relate directly to my major.	5	3
	66	I was married and one of us had to quit for financial reasons.	5	3

[a]Percentages below 3 percent are not reported.

Table 24. Harris eigenvalue, mean, variance, and standard deviation for 15 multiple item factors

Factor number	Harris eigenvalue	Mean	Variance	Standard deviation
1	8.17	28.83	46.98	6.85
2	4.15	22.42	74.78	8.64
3	2.88	14.02	18.61	4.31
4	2.73	13.41	15.37	3.92
5	2.44	12.89	20.35	4.51
6	4.66	21.23	28.12	5.30
7	5.18	39.56	165.50	12.86
8	2.53	11.30	22.45	4.73
9	54.04	49.80	213.12	14.59
10	3.42	26.11	47.59	6.89
11	3.03	37.93	122.94	11.08
20	5.33	41.46	83.63	9.14
21	10.35	59.43	162.18	12.73
22	3.75	30.98	81.50	9.02
23	2.41	15.03	45.63	6.75

Table 25. Single item factors and the items

Factor no.	Item no.	
12	2[a]	I wanted a slower life style.
13	11	I found the curriculum in my major inadequate for my career preparation.
14	13	I did not have freedom to explore other curricula so I could easily evaluate my interests and abilities.
15	46	I wanted to find out who I was.
16	64	I could not find a quiet place to study at my residence.
17	16	I was pregnant.
18	34	I was constantly defending my beliefs and values.
19	84	I was advised to leave by my adviser or counselor.
24	5	I was not sure about my college major.
25	6	I was not ready for college; I needed time to grow up.
26	14	I had a family problem at home (conflict, illness, or death).
27	22	I had health complications (physical illness, injury, mental disturbance).
28	48	I wanted to be closer to home.
29	83	I really did not want to come to I.S.U. in the first place, but my parents insisted.
30	52	I did not like the type of people who attend I.S.U.
31	58	I felt the city of Ames was too large.
32	60	I could not get along with my roommate.

[a]Item numbers correspond to those in the questionnaire.

Table 26. Factor score, means, variances, and standard deviations for 17 single item factors

Factor number	Mean score	Variance	Standard deviation
12	7.14	4.68	2.16
13	6.34	6.24	2.49
14	6.01	6.35	2.52
15	6.17	5.77	2.40
16	6.74	5.31	2.30
17	7.14	6.14	2.47
18	7.06	3.56	1.88
19	7.52	4.08	2.02
24	5.41	8.50	2.91
25	6.73	6.67	2.58
26	6.86	6.22	2.49
27	6.90	5.49	2.34
28	7.08	5.28	2.29
29	7.28	5.00	2.23
30	7.79	2.90	1.70
31	7.79	2.58	1.60
32	7.31	4.34	2.08

Table 27. Thirty-two factors, t values, and adjusted factor score means for Group I and Group II

Factor number	Factor name	Adjusted mean score		t value
		Group I	Group II	
1	Social inadequacy	7.24	7.17	.70
2	Lack of staff support	5.68	5.53	1.07
3	Academic difficulties	6.92	7.09	1.21
4	Scheduling problems	7.09	6.32	5.98**
5	Financial difficulties	6.61	6.28	2.34*
6	Lack of academic challenge	7.09	7.06	.20
7	Dissatisfaction with program of study	5.81	5.49	2.73**
8	University too large	5.87	5.43	2.93**
9	Coursework difficult and demanding	6.40	6.04	3.16**
10	Lack of job information and opportunities	6.68	6.36	2.87**
11	Poor study habits and academic preparation	6.32	6.32	0
12	Desire for slower life style	7.15	7.13	.14
13	Curriculum inadequate for career preparation	6.49	6.20	1.79
14	Lack of freedom to explore other curricula	6.02	6.00	.12
15	Self-actualization	6.43	5.91	3.34**
16	Lack of quiet residential study area	6.96	6.53	2.88**
17	Pregnancy	7.42	6.86	3.45**
18	Incompatible beliefs and values	7.28	6.84	3.58**
19	Advised to leave	7.53	7.51	.15
20	Dissatisfaction with local environment	7.09	6.72	3.83**
21	Personal and social barriers	6.60	6.60	0
22	Lack of commitment to college degree	6.35	6.04	2.69**
23	Marriage	5.28	4.73	3.77**
24	Uncertainty of college major	5.37	5.45	.42
25	Immaturity	6.67	6.80	.79
26	Family problem	6.94	6.78	.99
27	Health complications	7.01	6.80	1.38

*Indicates significance beyond .05 level of confidence.

**Indicates significance beyond .01 level of confidence.

Table 27. (continued)

Factor number	Factor name	Adjusted mean score		t value
		Group I	Group II	
28	Be closer to home	7.20	6.97	1.5
29	Did not want to enroll at I.S.U.	7.28	7.29	.07
30	Disliked types of I.S.U. students	7.87	7.72	1.35
31	Ames too large	7.80	7.78	.19
32	Roommate incompatibility	7.44	7.19	1.86

APPENDIX E: FIGURES

Figure 14. Frequency distribution of responses for multiple item factors[a]

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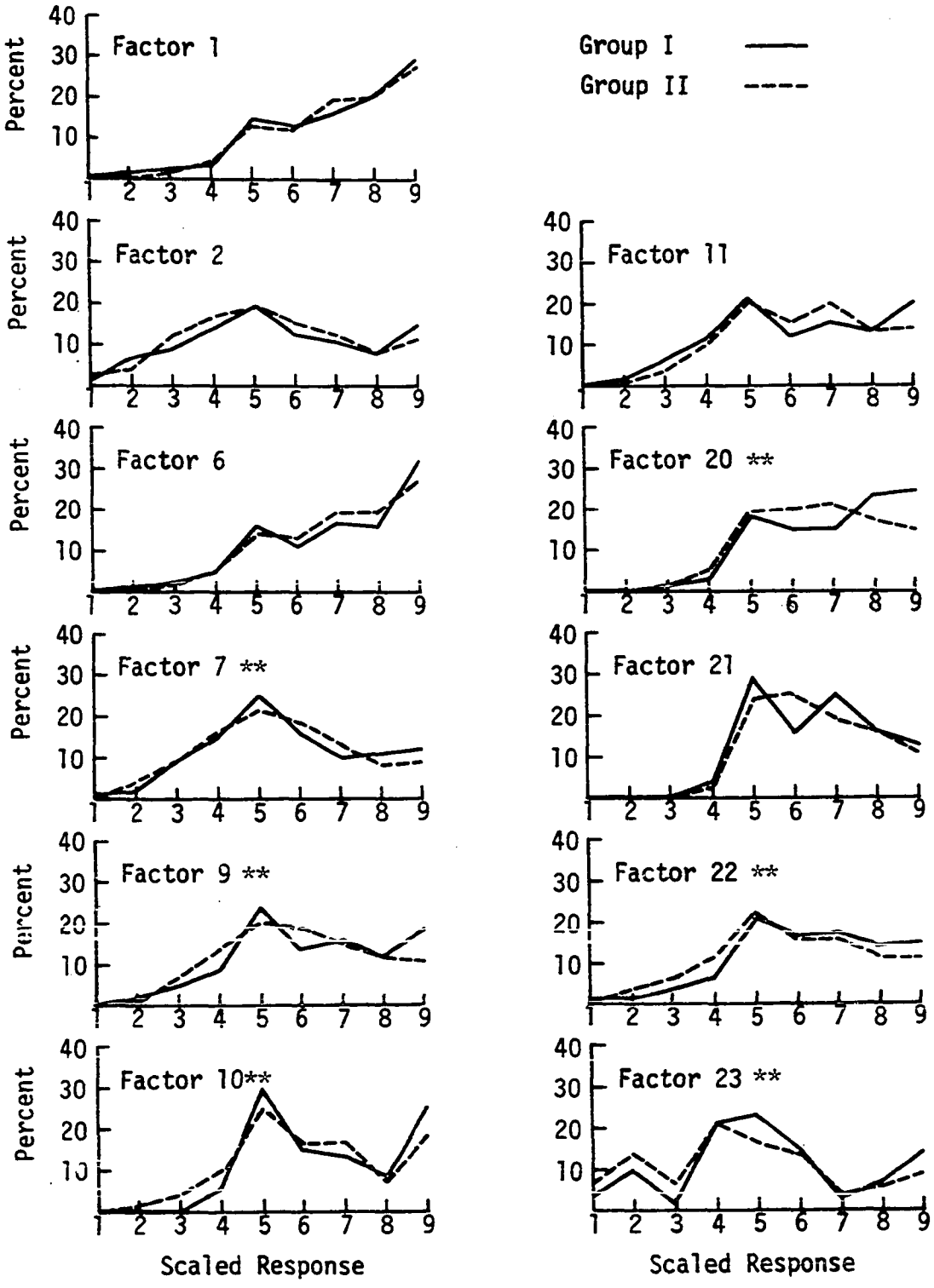
[a]Indicated on a 9-point scale: "1" = strongly agree, "9" = strongly disagree.

*$p < .05$.

**$p < .01$.

This is also true for Figures 15 and 16.


Group I
Group II
Factor 1
Factor 2
Factor 6
Factor 7 **
Factor 9 **
Factor 10**
Factor 11
Factor 20 **
Factor 21
Factor 22 **
Factor 23 **
Percent
Scaled Response

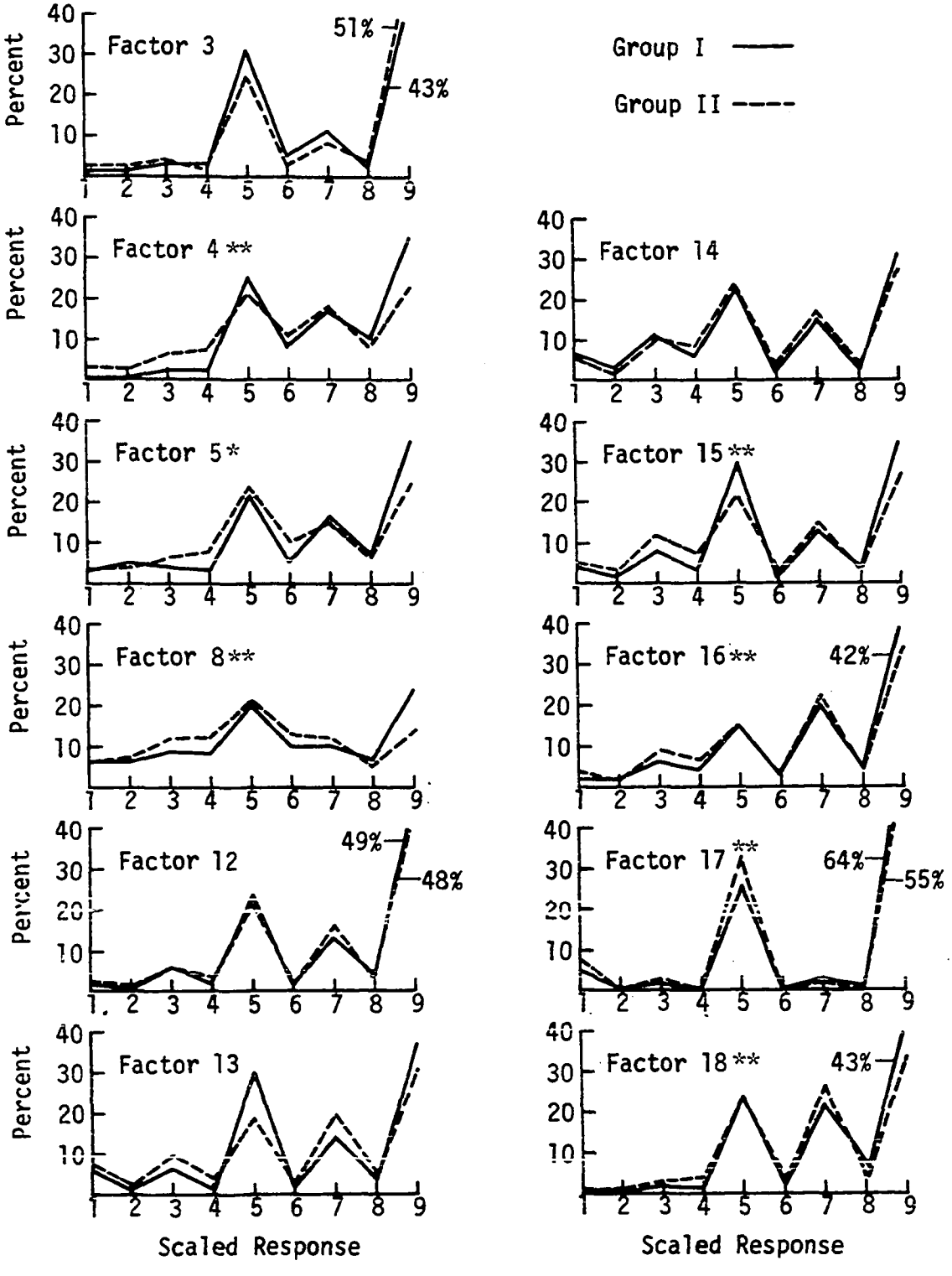


Figure 15. Frequency distribution for couplet and single item factors

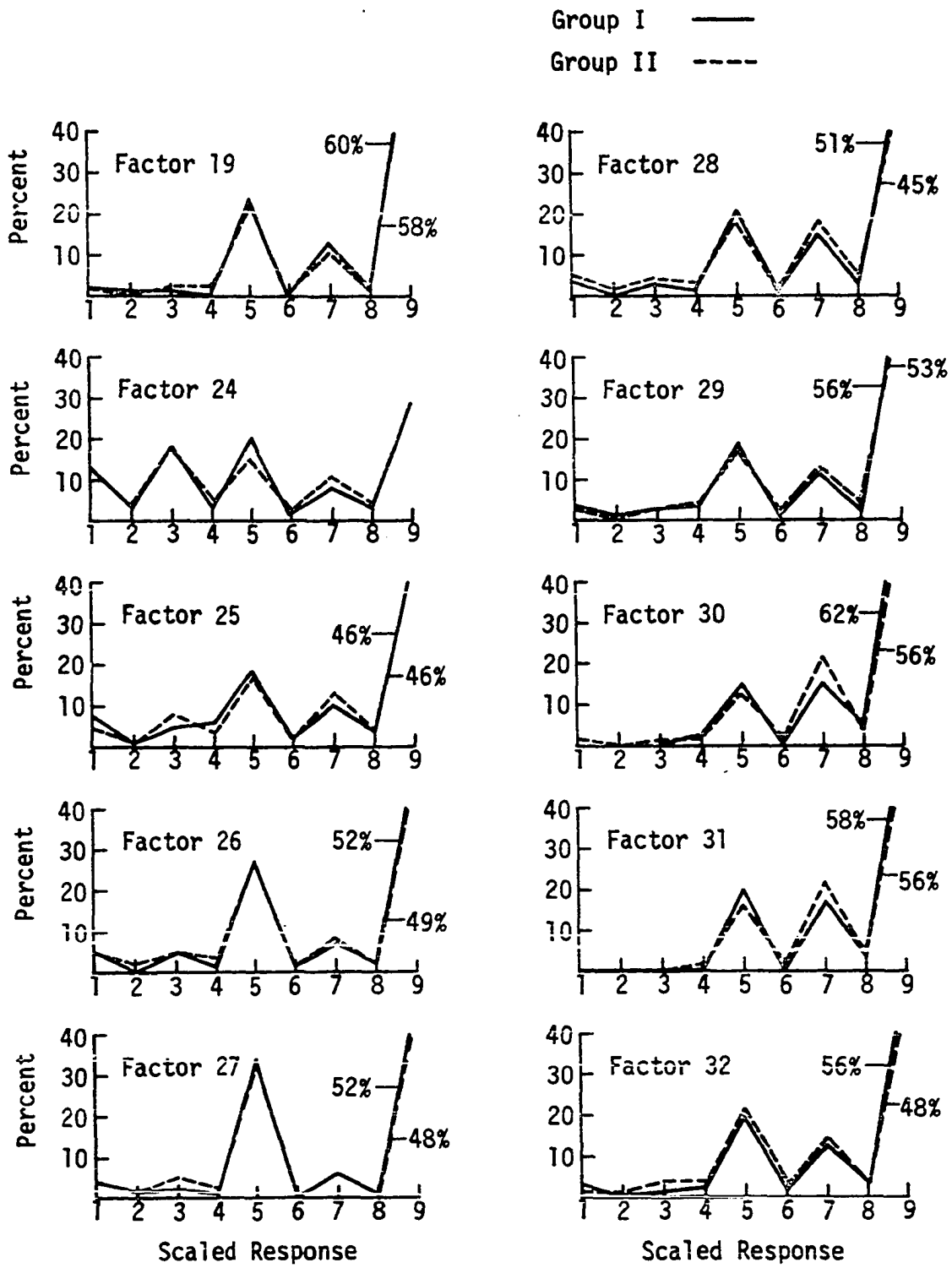


Figure 16. Frequency distribution for couplet and single item factors